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STERILITY IN WOMEN*

INCLUDING ITS SURGICAL ASPECTS

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Two tragedies often encountered by the physician in the same day and hour are, on the one hand, the couple who are unable to have an offspring and the other, the pair determined to end a pregnancy by abortion.

Until recent years the study of a childless couple consisted largely of a pelvic examination of the wife and an examination of a condom specimen of the husband, to determine the presence or absence of viable spermatozoa. From these two useful but wholly inadequate procedures an opinion was formed, a prognosis given, and usually, and unfortunately, a curettage of the woman was undertaken. Today, a sterility study is far from a simple problem. But of late years new light has been shed upon the subject which has greatly increased our diagnostic and prognostic ability, and to some extent our therapeutics. Certainly a great deal of helpful data may be obtained from a careful study both of the husband and the wife. I shall not attempt a complete review of the subject, but shall merely emphasize a few points of interest.

While this paper will deal with the female side of sterility, it does not minimize the importance of the male responsibility.

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DIAGNOSIS

A careful history and physical examination are obtained from husband and wife, and consultation with a competent urologist is often held if spermatoza are not found at all, or are dead, or are few in number and sluggish in movement as studied in a condom specimen.

Besides the routine data comprising any good history, one wishes to pay especial attention to the history of familial fecundity, the patient's occupation, traumas, operations, general diseases, general resistance and reactions to diseases, the food likes and dislikes, exercise, amount of exposure to sunlight, venereal diseases, and the sexual life past and present, including the patient's knowledge of sex hygiene. The number of childless marriages is variously estimated, but one in every ten is the usual figure given.

Forsdyke, and Mazer and Hoffman[1] consider male responsibility for sterility about 25 per cent, while Meaker thinks 33 1/3 per cent of causative factors are on the male side.

PLURALITY OF CAUSES

As a matter of fact, as Meaker[2] so truly states, there is nearly always a plurality of causes. In none of his series did he find less than two contributing factors; the greatest number was seven; and the average number of possible causes in the study of sterile couples was four and a half. He thinks the responsibility is divided between husband and wife in at least 90 per cent of

instances. Therefore, the problem is one of a combination of factors and not of a single one.

GENERAL CAUSES

It is a well known fact that severe chronic diseases may lower the threshold of fertility to the level of sterility. Advanced tuberculosis, extreme anemia, lead poisoning, etc., are but some of them. However, all of us have seen active tuberculosis, syphilis, carcinoma, etc., in pregnant women.

MALDEVELOPMENTS

The absence of essential organs of reproduction, such as ovaries or uterus, offers no difficulty in diagnosis, but the size of the uterus and ovaries varies so much that one is often in doubt as to the exact borderline between an infantile uterus, for example, and a normally small one. Certain it is that most of us have seen what we had formerly considered an infantile uterus become pregnant. In this connection Hellman[3] says: "If the intravaginal portion is definitely as large as the intra-abdominal portion, we have a true infantile uterus, and conception can not occur."

ENDOCRINES

Persons with marked myxedema or acromegaly are habitually sterile; but there are many intermediate degrees of endocrine deficiencies and hyperactivity that are not so readily recognized.

Briefly, the present theory of the physiology of menstruation and pregnancy, which has changed enormously in the past three years, is as follows:

1. A hormone of the anterior pituitary gland (prolan A) stimulates the ovary to form follicles and liberate ova. With this hormone, ovulation may be induced at any time of the year in lower forms which ordinarily breed only in the spring. Superfetation, and ovulation during pregnancy may also be produced. Without prolan A, no ova can be formed. Hence, there is total sterility.

2. Estrin, which brings on rutting in animals and induces copulation, is liberated with the development of the graafian follicle. It probably stimulates the formation of secretions which facilitate the passage of the sperm cell into the uterus and tubes.

3. Prolan B, a second hormone from the anterior pituitary, then stimulates the formation of the corpus luteum.

4. The corpus luteum secretes progestin, which sensitizes the uterine lining, and maintains the nutrition of the embryo during pregnancy.

Thus, hormone 1 produces the egg; 2 secures access to it of the sperm cell; 3 stimulates, and 4 prepares the nest and maintains the nutrition of the embryo. The stimulus travels in zigzags from the anterior pituitary to the ovary, back to the pituitary and again to the ovary. Menstruation results each time that this succession fails to produce a pregnancy. If the ovum is fertilized, the corpus luteum persists with its secretion, throughout gestation, and the secretion of the anterior pituitary is diverted to the urine, its presence there in large quantities being the basis for the Aschheim-Zondek pregnancy test, and its many modifications.

Graves states that an enormous volume of physiological studies of the hormones of the pituitary and the ovary has resulted in very little of clinical value; that the mountain seems to have labored and mourned most greviously, and has given birth to nothing but a mouse.

To this, one can only answer as a great physicist of the Nineteenth Century is said to have answered Gladstone. Faraday was showing Gladstone an induction coil, whose principal later made possible the electric dynamo with its countless gifts to industry. Gladstone was a little bored. "Of what use is it?", he asked. "Some day, Sir," replied Faraday, "you may be able to tax it."

Where physiology leads, medicine is sure to follow; and in the not too distant future, sterility will profit greatly by studies of the physiological effects of the sex hormones.

DIETARY DEFICIENCIES

Evans' work on vitamin E, Macomber and Reynolds' investigations along the same

line, and an extensive literature since then shows very clearly that in laboratory animals there is a definite and marked relationship between vitamin deficiencies and fertility. All the vitamins seem to play some part directly or indirectly in gestation though our knowledge of some exceeds that of others. Mineral elements are just as important.

At the present time there is more hope from treating endocrine sterilities with dietary measures than with hormones. A number of different specific types of dietary sterility have been produced experimentally; and the endocrines are greatly stimulated by various food deficiencies. Vitamins and endocrines are doubtless closely interrelated.

In the absence of iodine, the thyroid enlarges. In the absence of vitamin D, the parathyroids enlarge.

Summarizing the specific effects of vitamin privation upon reproduction in animals, we find:

In the absence of vitamin A, the fertilized ovum fails to be implanted in the uterus. Without prolan B (an anterior pituitary hormone) it also fails of implantation.

Large quantities of vitamin B are necessary for gestation and lactation. In the male with beriberi it is noted that motile spermatozoa are produced, but that the prostate and seminal vesicles have an abnormal histological structure which shows that the male hormone, testiculin, is not being produced. From analogy it might be surmised that the female sex hormone, estrin, is similarly lacking following an extreme vitamin B deficient diet.

Vitamins C and D are closely related to the metabolism of calcium; and large quantities of calcium must be mobolized in pregnancy. Vitamin D is also intimately related to parathyroid function.

E is called the fertility vitamin, as it is necessary for reproduction in males and females. In its absence the fertilized ovum can become implanted but is resorbed. It will be recalled that nutrition of the embryo depends upon the ovarian hormone, progestin. The writer was inclined to relate the two together till informed by a distinguished anatomist that the histological pictures of resorption in the two conditions are entirely different. However, the effect of discontinuance of pregnancy is the same.

It has been shown that complete removal from the diet of the element manganese, which is normally present in foods merely as a trace, will result in perfectly healthy looking male and female adult rats. However, the males are found to be completely sterile. The females, if mated to normal males, bear offspring which practically never survive. The female mammary glands also fail to function.

This is merely to mention a type of experimental dietary deficiency which produces a female animal of normal appearance with defective ova.

It may be mentioned that regular, normal menstruation can occur without production of ova. Merely the fact that a woman menstruates does not prove that she has ovulated.

VAGINAL ACIDITY

The normal acid reaction of the vagina must exist for a purpose. But for many years it has been claimed to have a deleterious effect upon semen in some cases. Consequently, a sort of arbitrary rule was evolved, namely, to prescribe a sodium bicarbonate douche for sterile women just prior to coitus.

Mason,[4] of Denver, in 1929, noted that the concentration of spermatozoa was much greater in numbers in the external os and in that immediate vicinity than elsewhere in the vagina. The apparent cause he seems to have discovered by adding a drop of vaginal secretion to a specimen of semen, when he observed that it stimulated the spermatozoa which tried to move away from the acid vaginal secretion into the more alkaline medium of the semen. That is, all the active sperms moved away, leaving only a few relatively inactive stragglers behind. A still smaller number swam

into the acid secretion itself. For the first time a logical explanation was evolved of the normal migration of spermatozoa toward the cervical os, from the acid vaginal vault toward an alkaline medium. He concludes, therefore, that it is not so wise a plan to order a pre-coital alkaline douche.

To hear from the other side, we may quote from Loomis,[5] of California: "The statement that the alkaline douche is unnecessary because of the alkalinity of the semen, is plainly refuted by the fact that 60 per cent of patients whose reaction was tested after coitus, no douche being used, were still acid; and also by the fact that in several instances only dead spermatozoa were seen until coitus was preceded by an alkaline douche, after which normal motility was found."

CERVICAL LESIONS

Cervical ectropion with or without lacerations of the cervix, endocervical infections, and stenosis of the os, constitute the chief lesions of the cervix detrimental to conception. According to Polak[6] endocervicitis accounts for 75 per cent of sterility in women. These lesions are all easily diagnosed but the chief test of their harm is that of Huhner. The patient reports within one hour, if possible, after coitus, a specimen of the cervical secretion is removed and examined with a scope for an ample number of viable and actively motile spermatozoa. If they are not found and if a condom specimen shows the husband to be all right in that respect, one thinks of a toxic condition of the cervix, often due to chronic infection. An acid reaction of the cervical canal also is a hindrance.

The worst cervical condition is that of a plug of a tough, tenacious character which has been spoken of as "tanglefoot." Obviously no upward progress of the spermatozoa can be made through such a barrier. It is one of the chief causes of sterility.

The interesting work of Kurzrok and Miller[7] of Columbia University, in 1929, shows that normal semen contains an enzyme that digests the mucus of the os under ordinary circumstances.

TUBAL LESIONS

Obstruction somewhere along the course of the fallopian tube causes 35 to 40 per cent of female sterility, according to Hunner and Wharton.[8] The obstruction varies all the way from a light so-called agglutination of the mucous membrane lining the tubes, to dense scar tissue obliterating the lumen, or adhesions closing the fimbriated ends. Gonorrhea takes first place among the causes, followed by infections from abortions, from childbirth, from the gravitation of pus from appendicitis, and rarely from tuberculosis of the tubes. Gonorrhea produces more harm to the endosalpinx while puerperal infections are prone to cause much perisalpingitis.

RETRODISPLACEMENTS OF THE UTERUS

Many of us can recall when every retrodisplacement of the uterus was considered pathological. We now know that a considerable percentage of women have congenital retrodisplacements and others acquire the condition following childbirth, without suffering any physical discomfort, provided there is no complication such as a chronic inflammatory disease in the pelvis or an over-stretched or lacerated perineum. On the other hand, there seem to be four conditions under which retrodisplacement may prevent conception:

(1). When there is a short anterior vaginal wall the cervix may be pulled up well out of the seminal pool so that few or no spermatozoa can gain access to the os. This can be determined by the Huhner test, i. e., by microscopic examination of the cervical secretion within one hour after coitus and looking for spermatozoa.

(2). In retrodisplacement associated with a relaxed vaginal outlet and prolapsus, where the os lies at or near the introitus, it is possible for the os again to lie well beyond the seminal pool.

(3). In some cases of acquired retrodisplacement, the malposition may cause a kinking of the tubes sufficient to prevent

the passage of gas during insufflation or of oil during the lipiodol test (Forsdyke).

(4). In a rare condition known as effluvium seminis, the vaginal outlet is dilated and the semen rapidly flows out (Huhner). This is benefited by having the patient place a pillow under her buttocks during coitus and lie in that position upon her back for some time afterward.

One should be slow to blame retrodisplacement as the cause of sterility. If all other factors can be ruled out in husband and wife, and if the uterus can be held forward with a vaginal pessary, there is no reason why it should not be tried. The writer has occasionally seen conception follow soon enough after correction of retrodisplacement by a pessary, to make it appear to be the cause beyond any reasonable doubt.

FIBROIDS

One woman in four who has reached twenty-one will be found to show fibroids of the uterus if that organ is seriously sectioned; and 40 per cent of women at the age of forty or over will show the same thing, according to Polak. This does not mean that all the tumors are of palpable size clinically or that all are producing any symptoms.

Lynch[9] states that:

"Sterility is said to exist in approximately 30 per cent of married women with fibroids. * * * Only 169 of the 215 fibroid cases in the married women of my series had had children, a sterility of 31.8 per cent.

"The above shows that there is twice as much sterility in fibroids in married women as is found in married women in general who have been under medical care."

The common belief that submucous fibroids are the usual type in sterility would seem refuted by Goetze (quoted by Lynch[9]) who found 91 per cent of his submucous fibroid cases had borne children. The greatest number of cases were of the interstitial and subserous varieties (Schorter, Young and Williams, and Goetze[9]).

Lynch believes that sterility is occasionally caused by fibroids and by retrodisplacements, but that the underlying cause in both instances is congenital and developmental in origin.

THE RUBIN TEST

As helpful as was the introduction of the Rubin transuterine insufflation test in the diagnosis of tubal spasm, stenosis, and occlusion, the writer finds himself using it less and less, in favor of lipiodol. With us its chief indications now are: (1) for patency tests in those unable to afford the cost of roentgen ray films that are necessary in connection with lipiodol injections; and (2) for re-opening tubes that have been opened before—in other words, for treatments.

LIPIODOL TEST

Instead of describing this well known and useful procedure, I shall mention some variations from the usual technic which seem to be improvements:

(1). Use a single or double Sims instead of a bivalve speculum, as the latter may cast a roentgen ray shadow over part of the uterine canal if the cervix is drawn downward as it should be. The Sims can be removed before the pictures are taken.

(2). Use two tenaculum forceps instead of one.

(3). Fasten the tenacula transversely in the upper and lower lips of cervix so as not to encroach upon the lumen of the cervical canal when the uterine cannula is introduced. A more efficient stoppering effect is thus accomplished.

(4) Pull downward upon the tenacula to keep the uterus more or less in the midline, and to prevent its superimposition upon a tube as sometimes is the case when one unconsciously pushes the uterus upward into the pelvis in an effort to keep the cannula snug in the uterine canal.

(5) Do not remove the cannula after the first films are taken. Instead of having the patient return the next day for re-raying in doubtful cases to determine whether or not the oil has escaped into the pelvic cavity, this plan usually works: With the cannula still in place as a sort of stopper, have the patient slide down to the end of the table where the tenacula and cannula can be lowered, and have her sit upright.

She should alternately draw the lower abdomen inward and push it outward, and strain and relax to churn-up the pelvic contents and scatter any of the overflow oil. Another picture is then made when she lies down.

TREATMENT

General.—Both husband and wife should be given such general and hygienic advice as is needed for increasing their health. This should include the correction of malnutrition and dietary deficiencies, the reduction of the obese, attention to exercise and the securing of ample sunlight, the removal of infections of the teeth and tonsils, etc. Thyroid extract should be given to those who show a lowered basal metabolic rate.

Cervical.—A stenotic cervical canal will usually be diagnosed when the Rubin or lipiodol test is being performed; and unless it is very marked may be dilated with sounds at that time. A preliminary hypodermic is usually all that is required. However, one sometimes has to use a general anesthesia to do a satisfactory stretching.

The tenacious mucus plug often found in the cervix of sterile women is difficult to overcome. Topical applications of antiseptics will sometimes alter its consistency very satisfactorily. In others, where the canal is amply large, stellate cauterization will do the work. There will remain some that no form of treatment will cure.

Tubal.—Fortunately the tubal insufflation method of Rubin and the lipiodol injections for hysterosalpingography are also followed within the next few months by a certain number of pregnancies. Five of the writer's successful cases followed these procedures.

Many tubes thus opened by gas or oil are thought to have an agglutination of the mucous membrane folds, while other instances may represent mucous plugs that are moved along just as one blows out a pipe stem. It is believed that in some cases even fine adhesions at the fimbria may be broken down long enough for the ovum to descend into the tube and unite with a spermatozoon.

Artificial Insemination.—Artificial insemination has always captivated the popular fancy. Meaker[10] states that it was successfully carried out by the Arabians with mares as far back as 1322; that fish eggs were artificially fertilized in 1700; and that Spallanzani impregnated bitches in that manner in 1780.

Not only does the Government use this practice in its Department of Fisheries, but breeders of high grade cattle employ the same means to conserve the valuable gametes of high bred sires.

In the last century and a half, interest in artificial insemination was revived by the successful work of John Hunter, who in 1799 injected the semen of a patient suffering with hypospadias into the upper vagina of the wife, with success.

J. Marion Sims, in 1866 was the first to produce successful artificial insemination in a human being by intra-uterine injection. In the five other cases in which he attempted it, he failed. It would seem indicated in couples showing normal spermatozoa and patent tubes, in cases with toxic cervical secretions, or with tenacious mucous plugs, in cervices too small for stellate cauterization, which have resisted topical applications and dilatations, and which show no active infection. In each instance the patient should be apprised of the fact that infection is a risk somewhat greater than the average woman runs in having a baby through natural processes.

The writer has had no personal experience with this method of treatment, for the cases in whom it seemed indicated refused it, and those who requested it did not seem suitable subjects.

OPERATIVE STERILITY

Surgery in general in sterility occupies a distinctly subordinate place to dietary, hygienic and mechanical measures in therapy. However, certain conditions render a woman totally and permanently sterile unless surgery can effect a cure. Maternal instinct is so strong that a woman will oft-

en assume a certain risk in the hope of bearing an offspring.

Although pregnancy occasionally follows the removal of a unilateral ovarian cyst, or the enucleation of a fibroid, it is probable that the helpful effect is the improvement in the general health that has been brought about and is not due to any specific effect upon the reproductive organs.

Operations for suspension of the uterus, which are rarely called for in sterility, require no special comment other than that some method should be selected that will leave free the muscular uterine ends of the round ligaments which are necessary for hypertrophy and elongation during pregnancy. For all practical purposes, the surgery of female sterility is limited to the cervix and to the tubes, the results of the former being much more fruitful than the latter.

The Cervix.—For some time it has been observed that few pregnancies followed trachelorrhapy. Any one who has performed many Sturmdorf apple-core operations for chronic edocervictis has also felt chagrined at the high percentage of resulting sterility. Consequently, one is forced to the conclusion that any plastic operation upon the cervix, particularly one which shortens the distance between the external and internal os, will militate against future pregnancies.

Some type of electric cautery, such as the Post, is most useful for removing ectropion of the cervix or for a stellate cauterization of the cervical canal in stubborn endocervicitis associated with a tenacious mucous plug which has resisted topical application of antiseptics. Under no circumstances should one cauterize the canal when it is small, as some contraction always follows every cauterization and this may be productive of dysmenorrhea, and the stenosis may aggravate the sterility. The only thing left for a very small os other than dilatation is artificial insemination in selected cases.

Stenosis of the os is commonly diagnosed but in the writer's experience is relatively rare. It does exist in a small per cent of cases, but should never be diagnosed by guesswork.

The Fallopian Tubes.—It is now very generally recognized that the nearer the occlusion of the fallopian tube lies to its fimbriated end, the more operable it becomes. Those situated in the isthmus are not operable for purely mechanical reasons. The ideal type for operation is that resulting in an enlarged bulbous tip very much as though a purse string suture had closed it. The best procedure is not to tease an opening in the end, but to do a salpingostomy by making a clean, sharp, tangential cut, removing a sort of eliptical cap or lid. Then the peritoneal layer is united to the mucous layer with six or eight interrupted sutures of the finest silk obtainable, on the smallest needle to be had. These should be cut short just distal to the knots. Catgut is not desirable because it must be absorbed and this process causes a congestion which will invite the attachment of omentum or intestines, whereas silk is not absorbed and is well tolerated without reaction by all clean tissues of the body. Too many sutures mean added needle pricks and further invitation to adhesions. Wherever possible attempt should be made to draw the peritoneal layer inward to the mucous membrane as in that way the line of union will be further removed from the ubiquitous omentum. This is contrary to prevailing practice.

It is needless to say that no such plastic operation should be attempted upon a tube unless there be at least one good ovary. By good is meant one that has not practically its entire surface raw where it has been freed from dense adhesions. In such a case we may rest assured it will become buried and plastered down by the first movable organ with which it comes in contact; and no ova can escape to reach the tubal opening.

We now come to the most important part of the operation of salpingostomy, namely, the other and main means of preventing the formation of adhesions at the site of oper-

ation. It is by far the most important point in this paper. We all think we are gentle surgeons, respectful of all tissues and ever alert to produce no trauma. This may be true, but salpingostomy requires not a super-knowledge or a super-skill, but it most certainly does require infinite patience and a different sort of gentleness from that employed in thyroidectomy, mastectomy, cholecystectomy, appendicectomy, etc.

Remembering that the operation rarely succeeds because of adhesions, how can we lessen them in every possible way?

First, by beginning with the anesthetic. A perfect relaxation and a large incision are necessary to obviate the necessity of any packs or gauze sponges in the abdomen to hold back the viscera from the field. Spinal anesthesia in suitable cases is probably the most ideal. Very deep ether narcosis, with the Trendelenburg position, and the assistant's hand to push back the intestines from the region of the tube, will also suffice. Gas will rarely answer the requirements due to the poor relaxation and great straining. No gauze sponges should be employed. Instead, cotton pledgets wrung out of saline solution, should be used exclusively and then only sparingly, to blot and not to wipe. The most harmful trait of an assistant is a zealous hyperneatness that makes him wipe away every speck of blood from a peritoneal surface and polish it each time he does so. Every stroke of the gauze sponge removes myriads of the covering cells which leaves a raw surface sure to result in adhesions.

The tubes should not be picked up with clamps, dressing forceps, or sponge holders. They should be gently lifted by the fingers of the operator or an assistant.

Unless the above technic, or some effective substitute, can be carried out, it is far better to refrain from the operation of salpingostomy.

In reviewing the literature on salpingostomy, there was usually much pessimism encountered. Many men of wide teaching experience and extensive surgical practice are frank to state that they have never had a case that subsequently became pregnant. In hopeful contrast to that, however, one finds Kerwin[11], of St. Louis, reporting 50 cases, 28 of whom answered questionnaires and reported seven as successful. One of the women had twins. That makes 25 per cent successful from those who could be traced.

In discussing Kerwin's paper, the late Dr. Polak, of New York, reported 51 salpingostomies with 7 patients who bore 10 babies.

CONCLUSIONS

Diet and general hygiene are of great importance in the treatment of sterility.

Further clinical advancements in endocrine treatment of sterility are to be expected when the preparations now in use in physiological laboratories become available to the general medical profession.

The local and operative measures of value in the treatment of sterility have been reviewed.

Several new points in the technic of the lipiodol test and in salpingostomy are given.

It is believed that salpingostomy properly performed is worthy of more frequent trial.

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INDUCTION OF LABOR WITH CASTOR OIL, QUININE AND PUNCTURE OF THE MEMBRANES.*

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NEW ORLEANS.

Indications for the artificial termination of pregnancy, after the child has reached the period of viability, occur very frequently in obstetrics. In the severer forms of toxemias it is usually evident that such a procedure is necessary. In other cases it remains a question to be decided according to the progress and course of the complicating factor. The method used should be one of simple technic that gives quick results and should not be injurious to mother or child, and, if possible, no anesthetic should be used.

The more important indications for such a procedure shall be discussed very briefly. The toxemias are, by far, the most important and most frequent conditions necessitating interference. In mild cases it is permissible to temporize with medical treatment such as elimination, sedation, free fluids and diet. This, only if the condition of the patient remains the same or improves. However, in the more severe types of toxemia, and especially eclampsia, it becomes evident that interruption of the pregnancy is essential. Post-maturity of the fetus is another important indication. It cannot be considered wise to allow a patient to continue her pregnancy two or three weeks past term, when the fetus is definitely fully mature as shown by palpation and according to measurements. There would be danger of intra-cranial hemorrhage and dystocia due to difficult molding of firm cranial bones. Rotation, if the case is originally one of posterior position, would be prolonged and, at times, require intervention with forceps. In our series labor was induced for either toxemia or post-maturity of the fetus. There are other indications that do not enter into the scope of this paper. Such are contracted pelvis (in the hope that a premature baby will lessen the incidence of dystocia), hydramnios, death of the fetus, premature labor for cases with habitual death of the fetus at term, constitutional diseases and others of rarer occurrence.

There are several methods in popular use today for induction of labor. They are divided into operative and non-operative. The operative methods consist of (1) Introduction of catheters into the uterus. (2) Insertion of a bag inside the cervix. (3) Puncture of the membranes and (4) Packing of the cervix and vagina with gauze. The last, we do not employ at all. Catheters were used before we began the use of castor oil, quinine and puncture of the membranes. There are 10 cases of these for comparison which shall be taken up later; also accompanying slides of roentgenograms of some showing the position of the catheters in utero. The bag, either deRibes or Voorhies, is a very efficient means of inducing labor, accomplishing this by irritating the uterus. It has, however, its disadvantages. First of all more manipulation and consequently more trauma is necessary in its introduction, thereby affording the possibility of infection. Furthermore a general anesthetic is necessary as a rule. Again there is the possibility of prolapse of the cord or malposition because of the displacement of the presenting parts. The drugs used in the non-operative procedures are castor oil, quinine and pituitrin. There may be either used in the form of Watson's method combining the three according to a definite regime, or in Hofbauer's method which consists of this combination with intra-nasal administration of pituitrin. The latter is used for slower action of the drug, and may be discontinued at any time. Again medical induction can be combined with some operative method such as puncture of the membranes. This was done in our cases.

Guttmacher and Douglass of Johns-Hopkins reported a series of cases in which this combined method was employed. They used

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three variations, the first consisting of castor oil, quinine, puncture of the membranes and pituitrin intra-nasally, the second without pituitrin, and third only puncture of the membranes. No appreciable difference was noted between the time of puncture of the membranes and the onset of labor pains in the cases with and without pituitrin. There was a definite difference, however, in the cases in which only puncture of the membranes was carried out. In these, the interval was lengthened considerably. They also found that this interval period was shorter in primiparae than in multiparae, the latter being 4.2 hours and the former, 2.5 hours. The average duration of labor in multiparae was 7.13 hours and in primiparae 10.08 hours.

Mathieu in a recent article reports the use of the following technic: Castor oil 2 oz. Two hours later a hot S. S. enema. As the enema is being expelled three minims of pituitary extract is given, and this is repeated every half hour until labor begins or until 15 doses have been administered. If this fails he repeats the same routine within 24 to 48 hours. Originally he had used quinine along with this. Later, he discontinued its use with no appreciable difference in results. He reports 96.6 per cent success with this method, but he considers a case as successful with more than one trial. In his series, the average duration of labor in primiparae was 11.1 hours, in multiparae 4.5 hours. There were no fetal deaths except those that were macerated, one from eclampsia, and another from strangulation of the cord.

Fitzgibbon of Dublin has also recently reported a series of 23 cases in which he punctured the membranes to induce labor. Castor oil, quinine and pituitrin were not used. No ill effects to mother or baby were noted. He also found that primiparae started labor quicker than multiparae. His results compare with those of Guttmacher and Douglass in the series of cases in which they used only rupture of the membranes, excepting the average duration of labor which was about twice as long.

The technic used in our cases is not original. It is that advocated by Guttmacher and Douglass. There was no variation and no selection of cases according to parity, position, indication or state of gestation. It is as follows: castor oil one oz. and quinine gr. X. One hour later the quinine is repeated. One hour following this the quinine is again repeated with an S. S. enema. Two hours after the enema the membranes are punctured. An Ochsner forceps is usually used for this after dilating the cervix manually up to one or two fingers dilatation. None of the cases were over two fingers dilated. This was carried out under strict aseptic precautions. There are 20 cases in the series. This number, although small, has brought out several facts rather convincingly. Of the 20 cases there were 5 primiparae and 15 multiparae, varying from the first to the ninth pregnancy. The ages varied from 17 years to 38 years. The interval between puncture of membranes and the onset of labor varied from almost immediately to 21 hours. The average in primiparae was 8.2 hours, in multiparae 3.06 hours. The average time in all cases was 5.62 hours. The immediate results are believed to be due to sensitization of the uterus by castor oil and quinine. The duration of labor was very interesting. It was apparently shortened in the majority of cases, shorter than would be expected if this particular procedure had not been carried out. The shortest duration being less than 1 hour, the longest 24 hours. The latter was a primipara who did not have strong pains at any time. Another patient began labor 2 hours after puncture of the membranes, and was delivered of an impacted breech 24 hours later. One case was delivered with mid-forceps after being in labor 17 hours. This was the only forceps case. Version and extraction was done in a case having prolapse of the hand who had been in labor for some time. The average dura-

tion of labor in primiparae was 12.6 hours and multiparae 10.4 hours, the average in all cases was 11.91 hours. There was one failure after 24 hours. This was an eclampsic patient 6½ months pregnant. A bag was used later. It is of general opinion that the method is not so efficient in cases earlier than the seventh month. This particular case would apparently bear that out. There were two still births in the series; the above case which was already dead, and another patient who was delivered of a macerated fetus. All babies, with the exception of three, weighed over 6 lbs. Four babies weighed over 8 lbs. As to the position 15 cases were either L. O. A. or R. O. A., two cases were occipito-posterior. One was a breech; and in another the hand was prolapsed. One case was undetermined. The incidence of fever during the postpartal period is very important because it might be thought that puncture of the membranes predisposes to infection. However, of the 20 cases, all were considered as afebrile with the exception of three. Two of these definitely had pyelitis, and the other was due to eclampsia. Cases were considered as febrile when the temperature reached 100.4° on two occasions, not counting the day of delivery.

In a comparison of our series with that of Guttmacher and Douglass, whose technic we have followed, we find that the interval between the time of puncture of the membranes and the onset of labor is longer in primiparae. This is contrary to their findings. But the average time for all cases is somewhat similar, theirs being 3.42 hours and ours 5.62 hours. This is much shorter than the cases in which they employed only puncture of the membranes and the series by Fitzgibbon. The figures being 10.05 and 11.8 hours, respectively. A comparison of the duration of labor in all cases in the several series is as follows:

Guttmacher and Douglass	8.47 hours
Mathieu	7.80 hours
Fitzgibbon	20.3 hours
Our series	11.91 hours

A comparison of results in this series with 10 of our cases using catheters showed, in an average of all cases, both multiparae and primiparae, that the interval time between the procedure and onset of labor was 2.16 hours longer. The average duration of labor 2.18 hours longer. We employed one or two catheters, two as a rule. The catheters almost invariably coiled up in the lower uterine segment, as shall be shown with slides. Occasionally they could be introduced slightly higher into the uterus. Three of these cases were considered febrile; another case had temperature ranging from 99 to 100 for seven days; one other case had fever due to eclampsia. In this small series it appears that puncture of the membranes with castor oil and quinine is more efficient and there is less incidence of fever than with catheters.

CONCLUSIONS

The number of cases presented, namely, 20, is too small to arrive at definite conclusions. However, it is a simple procedure, requiring very little operative trauma and, when done under aseptic precautions, has a low incidence of febrile puerperium. The onset of labor is usually more rapid than in other methods, and the duration of labor is not prolonged. No anesthetic is necessary. It has not been found to be injurious to mother or baby. Quinine, thought to be the cause of death of the fetus in certain isolated cases, was not responsible for any in this series. It is possible that we may be able to get equally as good results with a smaller dose of this drug, or perhaps abolish its use altogether. It is not advisable to use this method in cases that have a disproportion where the possibility of cesarian section may arise. In cases of abnormal position or presentation, premature spontaneous rupture of the membranes occurs frequently, with a prolonged and, at times, difficult labor. If artificial puncture of the membranes is practiced in this

type of case a similar condition can be expected.

DISCUSSION

Dr. E. L. King (New Orleans): It has been rather surprising to us that this method is as useful as it turned out to be. It would appear that early rupture of the membrane before labor starts is to be avoided, for all of us have been confronted with patients whose membrane ruptured prematurely and what is called "dry labor" developed.

It was only after reports were published by Hofbauer, and by other men whose judgment was excellent and whose results were gratifying that we decided to take up this method. It would seem that the trouble in dry labor as ordinarily spoken of is due to mal-position or other forms of dystocia with which we are dealing and not to rupture of the membrane. In other words, we get early rupture of the membranes in such conditions as occipitoposterior so that the trouble we get into and the difficulties we have are really due to mal-position or mal-presentation rather than to draining off of the fluid. This is certainly manifested by Solomon's method, who emphasized the point that we should not only rupture the membranes but lift the head up and let the fluid escape in order to get efficient action with the procedure.

The thing I want to mention in the treatment is the use of quinine. Quinine has been very popular in the induction of labor since first brought out by Watson several years ago, although several cases of deaths of the fetus apparently from the use of quinine reported by Gellhorn of St. Louis and others. Their contention seems to be that the therapeutic use of quinine in treating cases of malaria found to be pregnant does not influence the fetus, but in induction 30 grains over a period of two hours may give us concentration enough to affect the baby. I have had one or two experiences at Charity where I felt that quinine might have caused death of the baby. However, in this particular series it has more satisfactory than the use of catheters and much safer than the use of bags. Its disadvantage is in the premature cases, 6 or 7 months, where it doesn't seem to work at all. In these cases it is difficult to get labor started by any method.

Dr. T. Benton Ayo (closing): Just one other thing that I want to add, which I failed to state in the paper, that is in all the cases the fluid was drained off by lifting the head up after rupture of the membranes.

We still have a little hesitancy in using that amount of quinine, and in future intend to give 5 grains in 3 doses, about 15 grains altogether.

THE PLACE OF DEXTROSE PHLEBOCLYSIS IN SURGERY.*

REGINALD A. CUTTING, M. D.

NEW ORLEANS

The word "phleboclysis" is derived from two Greek roots, φλέψ (vein) and κλύσις (injection), and therefore means "the process of introducing any liquid substance into a vein,"—liquid substances, obviously, being the only varieties of substances susceptible of injection.

"Venoclysis", though it is a word which is listed in the dictionary, is a very undesirable term inasmuch as it is a hybrid composed of one Latin root "vena" (vein) and one Greek root κλύσις (injection). No person who has even a casual acquaintance with classical languages can use such a term as "venoclysis" without mentally wincing, and conversely, those who use the word without realizing its bastard origin convict themselves thereby of a kind of ignorance which, for centuries, has been considered inconsistent with a liberal education.

Furthermore, the word "phleboclysis" (or "venoclysis") when used without modification, is generic and includes within its meaning all methods of injecting fluid substances into veins; there is nothing in the sense of the word to indicate rate of injection whether relatively rapid, as in the case of most hypodermic injections into veins, or slow, as in the case of the continuous drip infusion. Much less does the word "phleboclysis" include within its meaning any reference to the nature of the substances injected; injections of the arsphenamines are just as truly "phleboclyses" (or "venoclyses") as are injections of sodium chloride solution or dextrose solution; even blood transfusions as ordinarily practiced are true "phleboclyses."

The use of the word "venoclysis" to mean "slow, continuous, intravenous infusion" is

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irrational from every point of view and should be discontinued.

Formerly dextrose was often called glucose, but the product as it was prepared was impure and unsuitable for the scientific medical purposes to which it is put at present; accordingly glucose has the significance "impure dextrose." This usage of the two terms is not only sanctioned by history but also by the tenth revision of the United States Pharmacopeia and the usage of an increasing number of careful medical authors. Inasmuch as glucose is never used, or at least never should be used, for parenteral injection one should never speak of "glucose phleboclysis," but always of "dextrose phleboclysis."

"Dextrose phleboclysis," accordingly, may be defined as the process by which a solution of dextrose is instilled into the veins of a patient for therapeutic purposes.

The successful and satisfactory use of dextrose phleboclysis is intimately associated with three important controversial questions:

Is the dextrose which is injected into veins treated by the body in the normal way, *i. e.*, in the same way as that dextrose which is absorbed from the digestive tract?

Can post-infusion reactions be prevented?

When dextrose solutions are administered by vein should, or should not, insulin be administered in conjunction with them?

IS INFUSED DEXTROSE TREATED LIKE INTRINSIC BLOOD SUGAR?

In answer to the first question, *i. e.*, is the dextrose which is injected into veins treated by the body in the normal way? The assumption has been in the affirmative. It has been universally taken for granted that intravenously injected dextrose is capable of being polymerized and stored as glycogen, and also capable of being catabolized to carbon dioxide and water, during which process it acts as a source of heat and energy.

There is certainly one particular in which infused dextrose may behave differently from ingested dextrose; if injected too fast and in too highly concentrated form dextrose infusions are followed by urinary spillage or the appearance of dextrose in the urine.

It is generally accepted that glycosuria is not produced in healthy patients by the ingestion of large quantities of dextrose; urinary leakage occurs only when the blood sugar content rises beyond 0.16 or 0.18 per cent, and the ingestion of as much as 500 grams of pure dextrose at one time does not produce a concentration as great as this in healthy patients. (Maclean[1].) Five hundred grams of dextrose, however, is about as large an amount as patients can tolerate because of the development of uncontrollable nausea. Taylor[2], however, was able to induce natives of Natal, who are very fond of sugar, to swallow doses of 1,000 grams of dextrose, and five of the nine persons who were able to retain this large dose developed traces of sugar in the urine. If this observation is accepted as a normal reaction, it appears that urinary spillage is dependent solely upon the concentration of dextrose in the blood stream and not upon the avenue by which it is received.

When solutions of dextrose are injected intravenously, it must, of course, be remembered that the body of the infused patient is quite helpless to refuse the treatment even though the amount of the substance thus forced upon it exceeds the threshold for blood sugar tolerance. Under such circumstances either good or harm may result depending upon the purpose for which the infusion is given; if given with the idea of combating dehydration, *i. e.*, of supplying water, the result may be disastrous, because during the process of elimination of the dextrose by the kidney quantities of water are also eliminated, and under such circumstances the original dehydration may actually be increased rather than diminished. On the other hand, if the elimination of some toxic drug like the derivatives of barbituric acid is the desired end, the result may be highly beneficial in spite of the strain presumably placed upon

the kidney by the elimination of the unchanged dextrose.

Ordinarily the elimination of any considerable amount of dextrose by the kidney is undesirable, and for this reason the rate of infusion must usually be so controlled that the sugar threshold of the kidney is not exceeded. Most authorities accept the maximum rate of tolerance for intravenous dextrose administration as 0.8 gm. per kilo of body weight per hour as established experimentally by Sansum and Wilder.[3] On the basis of this figure the maximum rate of injection for solutions of different concentrations can be worked out by a simple mathematical calculation. In a person weighing 120 pounds, if a solution of 5 per cent strength is used it can be injected as fast as 15 cc. per minute; on the other hand, if a solution of 10.0 per cent strength is used the rate must be reduced by half, *i. e.*, only as fast as 7.5 cc. per minute, whereas, a 50 per cent solution could not be injected faster than 1.5 cc. per minute.

The crux of the matter of dextrose utilization when administered by vein hinges, however, not upon the excretion or non-excretion of the substance by the kidney, but is more fundamental and concerns the ultimate fate of the retained portion of the solution. Formerly, investigators were not a little embarassed by the fact that analyses of the blood, muscles, and liver of patients who had received dextrose intravenously failed to account for approximately 50 per cent of the dose, and speculation was rife as to what had become of the rest. The result was the "dextrose distribution problem."

The solution of the problem was simple, though somewhat peculiar. Half the dextrose remained unaccounted for only because investigators had failed to look for it in the right place. Folin, Trimble and Newman[4] showed that the entire amount which had been injected could be recovered analytically if the entire animal was minced and extracted, and that the apparent deficit resulted mainly from temporary storage in the skin. The skin is not, of course, a normal depot of glycogen storage and is therefore believed to act simply as a temporary storage warehouse until permanent accomodations can be provided in the permanent storage places, viz., the liver and muscles.

Another consideration which has caused some perturbation in the minds of those interested in the fate of injected dextrose has been the undisputable fact that the intravenous administration of dextrose does not necessarily increase the basal metabolic rate nor raise the respiratory quotient. The respiratory quotient during fasting averages 0.82, being 0.83 for males and 0.81 for females. The administration of 100 grams of dextrose by mouth usually causes an average maximum increase in the respiratory quotient of 0.12; the increase can usually be noted to begin within 7 minutes and almost always within 30 minutes, and is at its maximum within 2 hours.

Knowing these facts it has been a source of surprise to some that such an increase in the respiratory quotient cannot always be produced by an infusion of dextrose. The explanation is simple, though perhaps not obvious. The effect of oral administrations of dextrose on the respiratory quotient has been studied for the most part on persons or animals who were fasting, to be sure, but in whom there was a normal or only slightly reduced supply of glycogen in the glycogen reservoirs, viz., the muscles and the liver. Under these conditions, the body promptly proceeds to dispose of any additional dextrose it receives by combustion, and the respiratory quotient almost immediately increases. On the other hand, as Rabinowitch, Frith and Bazin[5] have shown experimentally, in those conditions associated with primary depletion of glycogen, *e. g.*, fatigue induced by prolonged muscular exercise, starvation, or post-operative recovery, the oral administration of dextrose frequently fails to increase the respiratory quotient at all and may actually de-

crease it. In such cases the body is not prodigal as formerly with its new fuel, but stores it for a time of more urgent need.

The body responds under the last type of condition to injected dextrose precisely as it does to ingested dextrose, and as Koster, Collens and Goldzieher[6] have demonstrated, dextrose infusions of moderate proportions usually fail to increase the basal metabolic rate in post-operative cases for a period of about ten days.

The question as to the ultimate fate of injected dextrose therefore can be answered as follows: (1) It may be released through the kidney in the urine if administered so rapidly that the mechanism of temporary storage is overtaxed, and the blood sugar rises beyond the kidney threshold; (2) if not, it is temporarily stored in considerable part by the skin; (3) if the glycogen store in the liver and muscles is adequate for future needs it is in considerable part soon catabolized to carbon dioxide and water, during which process it serves as a source of heat and energy and causes an increase of the basal metabolic rate and an increase of the respiratory quotient; (4) if the glycogen stores in the liver and muscles are inadequate, noticeable catabolism does not occur, but on the other hand the dextrose is conserved, to be ultimately stored in the natural glycogen reservoirs. In short, there is no evidence, either direct or indirect, to indicate that the body treats injected dextrose any differently from ingested dextrose.

CAN POST-INFUSION REACTIONS BE PREVENTED?

In answer to the second question, can post-infusion reactions be prevented? It seems logical to assume that the fundamental problem is to discover the cause or causes of these reactions, and that once these are known the means of prevention should be reasonably obvious.

Although many explanations for the so-called post-infusion reaction have been proposed, it has usually been assumed that there is but one cause, and this in spite of the fact that post-infusion reactions may occur after the lapse of variable periods of time ranging from 30 to 40 seconds to several hours, after the injection of variable amounts of solution ranging from one or two cc. to several thousand cc., after the injection of relatively concentrated or relatively dilute solutions, and may occur in all degrees of severity from a mild and fleeting pyrexia to complete collapse or even death in extreme cases. In view of these facts, it would seem at least on *a priori* grounds that the etiology is probably compound or complex rather than simple, and that several factors may be operative.

Insofar as one can judge from hearsay reports of cases which have exhibited severe and fatal reactions from dextrose infusions the cause seems as often as not to be some gross lapse in technic, frequently a fault in the preparation of the solution, occasionally such an error in administration as a rapid massive infusion of a concentrated solution.

As far as the published cases of fatal results are concerned, such gross errors are sometimes perfectly obvious though sometimes they can only be surmised by reading between the lines. It takes a certain amount of moral courage to confess as frankly as Yenan[7] in his published report that the solution which caused the deaths was an improvised one, sterilized over the open flame by boiling, obviously caramelized, and containing debris and particles of insoluble material in suspension.

That thrombosis and embolism may occasionally cause death after intravenous dextrose infusion is suggested by the report of a case by Askey and Hall[8] in which at autopsy multiple thromboses of the cerebral and coronary arteries and embolism of the renal artery with infarction were demonstrated.

Clark[9] reported a series of cases in which patients died of cardiac dilatation after receiving from 425 to 500 cc. of dextrose solution of 2-10 per cent strength.

Kosakai[10] has observed that the injection of as concentrated a solution of dextrose as 20 per cent causes the destruction of some erythrocytes and most observers

who have been attentive to this possibility are able to corroborate this statement. That this destruction of erythrocytes produces untoward clinical reactions, however, has apparently not yet been substantiated.

A late post-infusion reaction which differs from all others and usually occurs only after a large bulk of solution has been administered is the so-called "water intoxication" syndrone of Rowntree, which is characterized by nausea, restlessness, muscular tumors, convulsions, collapse, stupor, and coma.

In those cases in which ordinary care is exercised in the preparation of solutions, *e. g.*, the use of pure dextrose, carefully distilled water, adequate sterilization, and the infusion is allowed to proceed at a reasonable rate, the causes of post-infusion reactions are by no means obvious. Even in the early days of the infusion method it was appreciated by many workers that post-infusion reactions could be largely minimized by insisting upon a chemically pure drug and the best obtainable water, *i. e.*, triple distilled water.

It remained for Seibert[11] however, to show wherein the necessary purity consisted. Like the Listerians who taught the world that safety in surgery would be achieved not by simple cleanliness but only by sterilization, so Seibert has shown that safety in intravenous infusion can be achieved not by chemical purity or sterilization alone but only by the elimination of the specific pyrogenic factor in the infusion vehicle. It happens that this pyrogenic factor or "pyrogen" occurs not in the dextrose but in the water. Pyrogen is of unknown chemical composition, but it is definitely a product of bacterial growth; the bacteria which produce it are killed by ordinary methods of sterilization by heat, but the substance itself remains potent after sterilization. Ordinary methods of distillation do not necessarily rid water of this pyrogen, because it may distill over mechanically in minute droplets not completely reduced to vapor. This mechanical effect, however, may be overcome by the use of a simple device such as the "multiple baffle plate spray catcher" or the "Glinsky tube," devices which are listed in all chemical supply house catalogues.

Rademaker[12] has shown that water singly distilled through such devices, if used immediately, contains no pyrogen, and the intravenous infusion of solutions made with such water as a vehicle, produces no post-infusion reactions if other requisites of a safe technic are observed. If, on the other hand, this pyrogen-free water is allowed to stand for any considerable number of hours exposed to the air, bacteria settle out of the atmosphere into it, multiply, and contaminate it as before.

Pyrogen free water can be preserved in its purity after distillation only by complete and immediate sterilization and sealing against subsequent bacterial contamination; the seal may take the form either of a hermetic closure or more simply as the familiar "capping" of the bacteriological laboratory,—either method is effective at least for a period of fourteen days.

The statement previously made that infusions prepared with pyrogen-free water cause no reactions has been expanded, experimentally, in a most thorough manner by Rademaker. One by one he has eliminated most of the factors previously regarded as of etiological importance in the causation of reactions.

Perhaps the most interesting theory of causation of post-infusion reactions which seems to have been overthrown by the discovery of the actual pyrogenic substance, is the hydrogen ion theory. This theory which had considerable vogue about ten years ago led to the somewhat widespread use of buffer substances in dextrose solutions intended for infusion. Few authorities at the present time think of buffering ordinary dextrose solutions to control the acidity, and this in spite of the fact that distilled water may vary in pH from somewhat more than five to somewhat less than eight. The buffer action of the blood itself

is apparently able to take care of all ordinary variations in the chemical reactions of the infusion solution.

Rademaker deals summarily also with the question of temperature by showing that when pyrogen is not present in the distilled water used in the preparation of the infusion solution the temperature may vary within comparatively wide limits without causing any reaction whatever. This was the teaching, interestingly enough, of Rudolph Matas[13] in his original description of the continuous drip infusion in 1924, in which he stated that infusions could be given at room temperature with benefit in those patients in whom pyrexia was extreme and increasing, whereas in patients with hypothermic or decreasing temperatures a hot infusion was equally of benefit.

In a similar way Rademaker disposes very convincingly of many of the other former bogies of the intravenous infusion:

(1) The alleged toxic substance derived from rubber tubing.
(2) Speed of injection.
(3) Individual susceptibility.
(4) Disease itself, and
(5) Absorption from glass ware.

Whether all of Seibert's theoretical work and Rademaker's practical experimental conclusions will escape unfavorable criticism at the hands of future investigators remains to be seen. It seems to me quite safe to ascribe to the action of the aforementioned pyrogen or pyrogenic substance many or perhaps most of those reactions formerly laid at the door of hydrogen ion concentration, individual susceptibility, disease itself, temperature of solution and absorption from glassware, but I question whether it is possible to dismiss the case for (1) toxic products derived from rubber tubing and (2) speed of injection quite so summarily.

Although Rademaker was unable to produce reactions in patients injected with solutions in which fresh rubber stoppers had been boiled until they smelled strongly of rubber (unless pyrogen was present in the water at the start) it should be recalled to mind that Busman's[14] original work with the reaction-producing properties of fresh rubber (1) was concerned not with the rubber contained in rubber stoppers but that composing pure gum rubber tubing, and (2) that his reactions were obtained not after infusion but after blood transfusion. While admitting the possibility that fresh rubber tubing may actually be innocuous when used in an infusion outfit and that the reactions usually ascribed to the tubing may in fact be due to pyrogenic water in which the tubing may have been previously washed or sterilized, the matter does not seem to have been definitely settled, and in the meantime I would prefer to prepare any rubber tubing that I might have occasion to use essentially in the manner originally suggested by Busman, and supplement the procedure by thorough rinsing of the tubing in pyrogen-free water.

The possible influence of the speed of injection on the occurrence of post-infusion reactions has recently been emphasized by Hirschfeld, Hyman and Wanger.[15] They have presented rather convincing experimental evidence to show that excessive speed of injection of any otherwise innocuous solution introduced intravenously may cause within from 40 to 60 seconds symptoms of rapid and extreme depression of the blood pressure, extreme dyspnea or even apnea, and other symptoms such as salivation, vomiting, diarrhea, muscular atony, and muscular spasm; the reaction may or may not prove fatal. This reaction they have called "speed shock." Although Hirschfeld and his collaborators have apparently shown definitely that the phenomenon is not due to the presence of pyrogen, or to excessive vagal stimulation and that it cannot be produced in dehepatized animals, they have not very satisfactorily demonstrated their theory that it is definitely of hepatic origin. The phenomenon is undoubtedly a definite entity as the experience of many a physiologist, experimental surgeon, and clinician will testify, and the

contribution, whatever may be learned subsequently concerning the matter, is of definite value in emphasizing a matter of universal experience, viz., the danger of forcing intravenous solutions to flow too rapidly.

In summary of the matter of the prophylaxis of post-infusion reactions therefore, it seems safe to say that they are, in part, probably mainly, preventable on the basis of information at present available. When using an infusion solution composed of pure dextrose and pyrogen-free water delivered into a vein by properly prepared apparatus, the hydrogen ion concentration, the concentration of dextrose, the temperature, and the rate of infusion are not critical either separately or collectively. The hydrogen ion concentration should, of course, not vary unduly from that of the blood; the concentration of dextrose should not be definitely hypotonic so as to cause laking of the erythrocytes, and if excessively hypertonic should be injected with extreme deliberation; the temperature should not ordinarily be below 90 degrees F. or above 110 degrees F., but may vary with safety between these limits, and the rate of infusion should not exceed the maximum tolerated rate above which dextrose spills over into the urine. Within these limits, however, all these factors can safely be made secondary to the particular indications for which any given infusion may be required, and because, for instance, the obstetrician may find it to his particular advantage to use a 25 per cent solution of dextrose in a case of pernicious vomiting of pregnancy at a given reasonable rate of speed in a given optimum dose, and at a given temperature, is no reason why the neurologic surgeon should not use a 50 per cent solution in a different amount and at a different rate of speed in the treatment of a case with increased intracranial tension, or the industrial surgeon should not obtain a maximal effect in a case of hemorrhage or shock from an infusion of a 5 per cent solution at a much greater temperature, at a still different rate of speed and perhaps in huge quantities.

SHOULD INSULIN BE USED IN CONJUNCTION WITH INFUSIONS OF DEXTROSE?

Insulin was, of course, discovered and developed in connection with the treatment of diabetic patients; at first the administration of the drug was beset with difficulties, because the proper dosage and the principles underlying the regulation of dosage were uncertain. Under the circumstances of its early use excessive doses were frequently given inadvertently, and the condition of insulin shock, hyperinsulemia, or acute insulin hypoglycemia frequently ensued. The remedy was soon found to consist in the administration of dextrose, and because the symptoms of the condition were frequently alarming, the dextrose was frequently injected intravenously in the form of an infusion. Out of these and similar dramatic experiences with the use of insulin in diabetic patients grew the conception that a given amount of insulin is capable of causing the catabolism or utilization of a given amount of dextrose much as a given amount of alkali is neutralized by a given amount of acid, and this conception is, as a matter of fact, essentially correct as concerns extreme clinical diabetes uncomplicated by infection, and animals in whom experimental diabetes has been produced by removal of the pancreas. A difficulty arises, however, when one attempts to apply the same principle to the non-diabetic patients which constitute by far the greater proportion of patients in whom intravenous dextrose infusions are used.

Although Murlin[16] reported in 1925 that insulin was inactivated by incubation with a 0.3-1.0 per cent solution of dextrose at 37° C. for from one to two hours, du Vigneaud,[17] repeating Murlin's work later in the same laboratory (University of Rochester, New York), was unable to substantiate this finding. It seems plain, therefore, that insulin does not react directly with dextrose at all; *i. e.*, not in the same sense

that one chemical compound reacts with another in solution.

In fact, there is considerable doubt whether insulin when artificially introduced into normal animals stimulates the oxidation of dextrose (*i. e.*, stimulates carbohydrate catabolism) at all. Amongst those who have reported an increased rate of carbohydrate metabolism after insulin injection are Dudley and Marrian,[18] Lyman, Nicholls and McCann,[19] Ringer[20] and Katayama and Killian.[21] On the other hand, Rabinowitch and Bazin,[22] have shown in a series of eight normal human beings that the injection of insulin may temporarily, at least, caused decreased utilization of carbohydrates and an altered metabolism; these authors check both the blood sugar and respiratory quotient simultaneously.

With regard to the effect of insulin injection on the ultilization of artificially injected dextrose Cori and Cori[23] demonstrated that the tolerance of fasting rats could be increased from 2.5 to 3.0 grms. of dextrose per kilo per hour, or 20 per cent, by the injection of 20 units of insulin and that the tolerance of fasting rabbits could be increased from 0.9 to 1.3 grms. per kilo per hour, or 40 per cent by the injection of 40 units of insulin. Twenty units of insulin, however, is a rather remarkably large dose for a rabbit. Wierzuchowski[24] working with dogs found that when he injected dextrose without insulin at a rate of 2.0 grms. per kilo per hour, 12.1 per cent of the amount which he infused appeared in the urine, whereas when he added insulin only 0.5 per cent appeared in the urine.

Chaikoff and Macleod[25] found that the injection of insulin into rabbits might or might not increase oxygen consumption and the respiratory quotient depending upon the nutrition of the animal. Those rabbits which had been fed carbohydrates until the respiratory quotient stood at unity experienced no reaction whatever after insulin injection, whereas, rabbits in a fasting condition showed a significant increase in carbohydrate metabolism.

These are only a very few representative findings from a host of experimental data on the relation of exogenous insulin to carbohydrate metabolism in the non-diabetic subject. Further quotations would serve merely to illustrate a conclusion to which the thoughtful person is inevitably forced, and which might as well be stated without further delay, viz., that the physiologic action of insulin in the non-diabetic subject is apparently complicated and certainly unpredictable on the basis of such knowledge as is at present available.

Andrews and Reuterskiold[26] hazard the opinion that insulin when injected into the non-diabetic subject:

(1) Promotes storage of glycogen in the liver.

(2) Converts dextrose into some more oxidizable hexose, and

(3) "Brings about an increased affinity of tissue for water, thereby causing a concentratiion of the blood."

These authors have called especial attention to the danger of using insulin in connection with dextrose solutions when infusing patients suffering from post-operative acidosis and dehydration; they have observed that the dehydration effect of insulin is very pronounced in such patients and they conclude that the use of insulin under these conditions is a highly dangerous and useless procedure.

Titus and Lightbody[27] have called attention to the apparently well established fact that the administration of dextrose to non-diabetic patients stimulates the pancreas of these patients to increased secretion of endogenous insulin, and it is upon the basis of this phenomena that they have developed their "optimum dose" of dextrose. That this endogenous production of dextrose when reinforced by the artificial injection of insulin may actually lead to a condition of hyperinsulemia, has not, however, I believe, been sufficiently stressed. It is not at all impossible that some of the late infusion reactions which are sometimes seen

following the slow injection of dextrose and insulin actually represent a condition of insulin shock.

In summary, the only conclusion that can be reached at present with respect to the use of insulin in connection with dextrose in non-diabetic patients is that the insulin effect is not at all clearly beneficial and seems in certain cases to be clearly baneful. The "paradoxical hypolycemia" following plain dextrose solution infusions as stressed by Titus and Dodds amply demonstrates that the function of insulin production by the pancreas is not ordinarily defective in the non-diabetic patient and accordingly the need is not for more insulin to make possible the utilization of more dextrose, but merely for more dextrose to be utilized by the action of a normally functioning and perfectly adequate pancreas.

Unfortunately, limitations of time and space preclude any attempt to treat in detail the specific indications for dextrose phleboclysis in surgery. It is suggested, however, that a schema like the following may be of some value in visualizing the more important general indications for the infusion of dextrose. This classification, as will be noted, is a physiological one and is based on the part presumably played by the dextrose, by the water, or by both dextrose and water.

INDICATION FOR DEXTROSE FRACTION:

(1) The control of acute hypoglycemia whatever its etiology, whether produced by the injection of insulin and associated with the so-called "insulin reaction" or occurring in a variety of other conditions such as the terminal stages of burn toxemia. (Greenwald and Eliasberg.[28])

(2) As a means of supplying readily available food and energy under circumstances which preclude proper fuctioning of the normal processes of ingestion, digestion, and absorption; specifically in the acute toxemias which are associated with excessive nausea and vomiting, *e. g.*, the vomiting of pregnancy. (Titus and Dodds).

(3) As a stimulant of the process of diuresis:

- (a) In nephritis.
- (b) In the treatment of certain varieties of poisoning, *e. g.*, barbital (Johnson, Luckhardt and Lighthill.[29])

(4) As a means of producing dehydration, specifically the reduction of the bulk of the brain tissue, in cases of cranio-cerebral injury.

(5) As a means of supplementing, fortifying, or increasing the functions of the liver, specifically:

- (a) As a prophylactic preoperative measure in the more radical procedures of surgery of the biliary tract.
- (b) As a part of the active treatment of so-called "hepatic insufficiency."
- (c) As an indirect means of shortening the coagulation time of the blood. (Ravdin, Riegel & Morrison.[30])

(6) As a means of combating the variety of acidosis called "ketosis," which is dependent upon insufficient dextrose catabolism, and which is common in connection with various conditions, specifically in surgery, in

- (a) Diabetes.
- (b) Pre-operative or post-operative starvation.
- (c) Prolonged general anesthesia.
- (d) Conditions of unstable or excess metabolism such as are found amongst infants and children and adults with thryrotoxicosis.

INDICATIONS FOR WATER FRACTION:

(1) As a means of restoring blood volume and combating a failing circulation either in lieu of, or as a preliminary to blood transfusion, in conditions of profound toxemia, shock, and hemorrhage.

(2) As a means of combating dehydration, either pre-operatively or post-operatively in cases of dysentery or severe

diarreha, or in extensive superficial burns, and intestinal obstruction; in the last named two conditions, however, the dextrose is only a valuable adjuvant to sodium chloride solutions, the action of which is more specific.

INDICATIONS FOR BOTH DEXTROSE AND WATER FRACTIONS:

(1) As a means of supplying both water and nutrition to patients who can tolerate neither substance by mouth and in whom for one reason or another the other channels of administration are not considered ample, specifically:

(a) In the early post-operative period in the case of patients who either were victims of dehydration and inanition at the start or in whom the operative procedure itself was an extreme ordeal.

(b) In cases of prolonged peritonitis and profound surgical sepsis. (Matas.[31])

(2) In cases of gastric, duodenal, or high jejunal fistula in which material introduced by mouth finds an exit from the gastro-intestinal tract before it has had time to be absorbed.

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DISCUSSION

Dr. E. L. King (New Orleans): Dr. Cutting has left very little to be said about this subject, but there are a great many points to be brought out that are extremely important from a practical point of view concerning the use of glucose.

There are a few things I want to mention from the point of view of the practical side of the use of glucose intravenously, some brought out by various observers, some noted from our own work. One is the question of the spilling over of glucose into the urine in case the infusion is given too rapidly. Titus in Pittsburgh has done very interesting work and has reached the conclusion that the average patient cannot handle more than a certain amount of glucose. He feels that there is a dose of glucose, just as there is a dose of morphine, or any other preparation, and from his work has concluded that the dose of glucose that can be properly handled by the average patient is 75 grams at one administration. Furthermore, he feels that that should be given over a considerable period of time. In his experience, it takes 1½ hours for a patient to absorb 75 grams of glucose. He feels the best way is in a 25 per cent solution given at the rate of 100 cc. every 30 minutes, in other words 300 cc. given in 1½ hours.

With regard to reactions, we do not see as many as formerly, whether due to better preparation of glucose or not. Several years ago, I had a series of reactions in a hospital here in town. I proceeded to get busy and find out about the the preparation of the solution. The main thing was the preparation of the distilled water and I found out it was not manufactured in the pharmacy and was not bought from a wholesale druggist, but was condensed steam from the power house of the institution, and that condensed steam was collected and sterilized and used in the preparation of glucose. I questioned the absolute cleanliness of that and suppose this method of manufacture was discontinued as I have had no reactions of consequence since that.

I would like to ask Dr. Cutting about pyrogen's responsibility for so many reactions. Is it easy to be detected by test? Next, if the apparatus that is capable of eliminating pyrogen is used in any local institutions?

The question of rubber tubing as a cause of reaction brought out by Dr. Cutting, is a fact to be considered, especially new rubber tubing that has not been properly prepared.

About the use of insulin in conjunction with glucose, there has been quite a divergence of opinion in obstetrical literature on this point. Titus of Pittsburgh contends that insulin should not be used in pregnancy and Thalhimer of Milwaukee contends just as strongly that it should be used. Titus contends that the use of insulin is not necessary because the pancreas is not affected in the vomiting of pregnancy, that it may get us into trouble and may be actually a danger to give insulin along with glucose. Thalheimer contends that the use of insulin helps catabolize glucose and make it available for food supply. However, I find in treating severe cases I seem to get better results with the use of insulin—1000 cc. of 10 per cent glucose given slowly, 1½ hours to give it; 30 units of insulin in broken doses along with the glucose. I am very sure this has helped a few of my pregnancy cases more than plain glucose. That is purely empirical and may be wrong. The use of glucose in other toxemias of pregnancy has been of benefit, particularly in eclampsia.

Dr. Cutting (closing): The optimum dosage and rate of injection of dextrose in solution can no longer be regarded as a matter of opinion. It has been determined by Cori, Wilder, and Sansum that the human body is capable of utilizing dextrose no faster than from 0.75-0.80 gms. per kilogram of body weight per hour; on this basis it is possible to calculate mathematically the maximum rate at which solutions of different percentage strengths can be given without causing glycosuria, and obviously the maximum tolerated speed is greater for dilute solutions than for concentrated ones. With respect to the total amount of dextrose to be given at any one seance, the work of Titus, Dodds, and Lightbody is of more than passing interest. These workers in the field of obstetrics prefer for the purposes of their own speciality 25 per cent solutions of dextrose. They find, when they inject this solution at the maximum tolerated rate and continue the injection at that rate indefinitely, that the blood sugar responds by a gradual and progressive rise to a certain maximum value, after which it undergoes a gradual progressive fall which frequently takes it eventually even below the value it had at the beginning. Inasmuch as these variations in the blood sugar level occur in spite of the fact that the influx of solution is maintained at a constant level, the explanation of the blood sugar variation must be sought in a response of the body, most probably a response of the insulin producing or liberating function of the pancreas. The maximum elevation of the blood sugar reaction curve before it goes into its subsequent decline is therefore

taken as the point marking the change from maximum dosage to overdosage; this end point is reached when 75 gms. of dextrose have been administered.

Pyrogen is a product of bacterial growth, presumably a protein or a cleavage product of protein; it occurs in such minute amounts in distilled water, however, that it cannot be detected or isolated by ordinary chemical means. Minute amounts of this substance are nevertheless apparently capable of producing profound reactions when injected intravenously, such amounts as might adhere to rubber tubing or glassware during washing or sterilization of infusion apparatus with contaminated water. It would be futile to attempt to prevent reactions by the most careful preparation of solutions and then to use an infusion apparatus whih had not een thoroughly purged of pyrogen by generous washing with pyrogen-free water.

A FEW CRITICAL REMARKS ON THE "WHYS AND WHEREFORES" OF BAD RESULTS IN FRACTURES OF LONG BONES.*

A. C. KING, M. D.

NEW ORLEANS.

This paper is intended to call attention to unfortunate results in fractures of long bones only, since deformities occurring in this class of cases are more evident to the eyes, especially the eye of that physician responsible for such conditions.

None of us enjoy the spectacle of one of our patients ambling along with a limp, or of trying to perform manual labor with a crippled hand or arm, and if our conscience is in good shape, our one wish is that our work had been better performed. A crippled hand or arm does not always mean bony deformity alone, but bony deformity plus an ischemic contracture due perhaps to an improperly applied splint or cast or to excessive pressure produced by a tight bandage enthusiastically applied in the vain hope that what our lack of skill failed to accomplish, the tight dressing might.

A good rule to follow is to make your dressing fit the patient and *not* the patient fit the dressing!

A few words regarding Volkman's contracture may not be amiss. Myerdig, of the Mayo Clinic, reported in 1930 as having observed, from 1910 to 1927, one hundred and twenty-eight cases, seventy of which had splints, twenty-five had casts, ten had bandages, eight had splints, bandages and flexion, and so on. Not all cases were due to fractures, but the majority were. Considerable controversy still goes on as to the cause of this almost incurable condition, its pathology, etc.; but controversy does not cure the patient. Surely this is one condition where prevention is far better than cure, and this is accomplished only by eternal vigilance following the reduction of your fracture.

In times now happily consigned to the limbo of forgetfulness, with no roentgen ray to guide us, our efforts at reduction consisted merely of extension, moulding the fragments by hand, and the application of whatever apparatus we were accustomed to use. A straight limb meant correct replacement and there was no intermediate roentgen ray check-up, as we have today. Results were good, bad or indifferent. We pulled on the limb and hoped that the bones would accommodatingly fall into correct alignment, and applied the dressing.

We were limited as to pathological knowledge, apparatus, material, and a clear understanding of muscular action, besides which there existed no unity of opinion in regard to methods of procedure and appliances. In short, this phase of surgery had been terribly neglected, a broken bone being simply a broken bone which anybody could repair.

Permanent crippling was common and amputation frequent in compound or infected cases.

The World War brought us up with a jerk and we came out of it with a clearer understanding of treatment, appliances, results, and best of all, a fairly unified profession as to the handling of certain types,—more particularly fractures of the

*Read before the Orleans Parish Medical Society, December 14, 1931.

femur and compound fractures in general. Physiotherapy has come into its own as a restorative measure, and we are now concerned, as never before, with final results.

The question in my mind today is, "Do we instruct our younger men adequately in this line of work?" "As a twig is bent, so does the tree grow." As a young man is taught, so does he practice until later in life he may wake up to find that he has been emulating our ancient and respected friend, Rip Van Winkle, and finds himself far in the rear of medical and surgical advance.

Much of our work today is on a par with that of many years ago, an example of which is that of splinting fractures of the bones of the forearm with stiff flat boards, instead of carefully moulded, well-fitted splints of plaster. That is one illustration only. There are others.

We do not expect the student to specialize in this type of work and become an expert any more than we expect him to perform delicate operations without adequate training, but the man who becomes a general practitioner should at least fit himself to handle fractures, since, thanks to the auto, a large part of his practice will consist of fractured legs and arms. Neither do we expect him to perfect himself in two short years of internship, in open work, bone grafting, and such, but he should be willing to learn enough to turn out satisfactory work in the ordinary run of the day's cases. As to open work, that is almost a specialty of itself, and as Dr. E. Denegre Martin said in a recent address, "I know of no branch of surgery which requires more skill, a more thorough technic, greater regard for asepsis, patience, and thought, than this subject".

The late Dr. John B. Murphy said this, "In doing bone work, you must expect and demand of yourself, a profound technic and a superlative degree of asepsis."

I am amazed at times with final results in the simplest kind of fractures, and realize that the fundamentals are lacking in those responsible for such work. Gentlemen, where lies the trouble, and what is the remedy?

A letter recently from one of my ex-interns, who manifested great interest in the details of open reductions, tells me this: "I helped my two associates do a couple of open reductions recently. On one I managed to get a pair of gloves, on the other neither gown nor gloves. Ain't this hell"?

Tragedies occur in all branches of our profession, many of them unavoidable, due, in the field of fractures for instance, to the terrible crushing injuries in factories, to compound comminuted cases in automobile accidents. Yet every day we are better prepared to cope with these conditions and certainly our results are far superior when compared with similar cases years ago. Even so, in the experience of any one of us under whose eye large numbers have passed, and many roentgenograms have been studied, many cases we find badly treated and deformed, when a little more care, a little greater mechanical skill, a little more help, the more frequent use of anaesthetics, and at least the fluroscopic check up, might have ended in more satisfactory results and a happier patient and a more satisfied doctor.

The slides I now present are mute evidences of ignorance, laziness, indifference, or all three, and you are at liberty to make your own deductions.

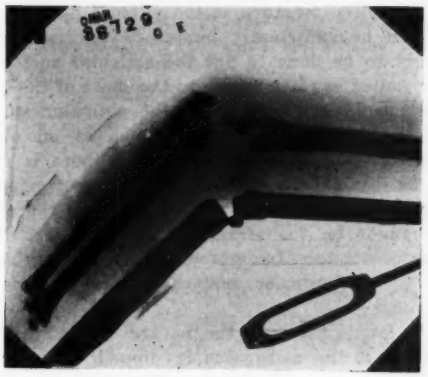
DISCUSSION

Dr. E. D. Fenner (New Orleans): Essayists who invite our admiration, in discussing fractures rarely show us any pictures like these. Their pictures are nearly always perfect examples of anatomical reduction and beautiful results. But all these essayists have pictures in their lists that they do not publish for us, and I think it is unquestionable that all of us who have much to do with fractures have lists of roentgenograms which are not satisfactory. Fortunately, not all fractures that are not anatomically reduced are functionally bad in the end, and it is also quite true that cases which apparently have gotten excellent reduction may show a great deal of disability afterwards. But there is no doubt that there is entirely too much of the kind of thing that Dr.

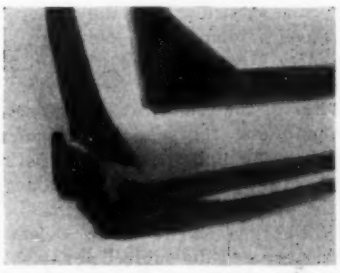
Supposed to be reduced. Plaster cast applied.

Volkman's Contraction.

Not reduced. Improper splint.



No reduction. Bad result.



No reduction improper splint.

Right angle splint. No reduction.

Neglected Pott's Fracture.

King has shown us in the slides which he has presented before you tonight.

My feeling is that there are two or three things in connection with very common fractures—and I would list as common, all fractures of the clavicle, Colles' fracture at the wrist, Pott's fracture at the ankle, which are important.

If we could but impress upon the young man who is starting out in the treatment of fractures, who gets but occasional cases, in regard to fractures of the clavicle, that there are a good many ways to get fairly good reduction. It is a consolation that they are far more common in children than in other classes of patients. In childhood, it doesn't make much difference whether you reduce or not. Nature will wipe out the deformity, but in the case of the adult, a badly reduced or badly positioned fracture of the clavicle leaves a very unsightly deformity.

When it comes to the next most common fracture, Colles' fracture at the wrist, I do not think it can be sufficiently impressed that something ought to be done to put the articular surface of the radius at right angles to the shaft of the bone. Just as long as you have the articular surface of the radius tilted towards you at an obtuse angle to the shaft of the radius, there is going to be disability, not only unsightly, but crippling the patient for the rest of his life, and therefore, it cannot be too strongly impressed that these fractures ought to be reduced until the concavity of the anterior surface of the wrist is restored.

In Pott's fracture, the nature of the injury is such that the astragalus is slipped outwards on the lower end of the tibia. This produces valgus position, which corresponds to flat foot and is the most crippling position in which the foot can be placed. In dealing with this fracture, we ought to urge on the man treating it the absolute necessity of pushing the foot in on the leg and turning the sole in, inverting the foot. It has been my privilege and my honor to introduce into Charity Hospital, the Hamilton Russell method of treating fractures of the femur. It is a very interesting thing as years have gone by to find my friend Dr. Bradburn, who at first laughed at me and would not take any stock in this treatment and was at that time using very extensively Steinman pins and calipers, abandon them in favor of the Russell method of traction. He gets a great deal better results than I do, but I am still using it. It certainly is a superior method of dealing with fractures of the femur.

If you are going to get success with this, or any other method, it is necessary to pay attention to details. We see, particularly in big hospitals like Charity Hospital, internes passing y a bed where the patient is complaining of pain from the dressing. They think that is a necessary part of the treatment or that the patient is unreasonable. My own belief is that whenever the patient is complaining of pain from the bandage something is the matter with that bandage. It ought to be loosened or re-applied, and the thing that is causing the pain corrected. You find it in the fracture wards, where the patient has a plaster of Paris bandage on his foot and is complaining of pain in his heel, and you see the internes passing by as though it was something not to be attended to. And yet to change that bandage or reapply the plaster of Paris will make the patient comfortable. You find it where you see traction applied like Buck's extension. The patient suffers acute pain over the tendon Achilles, then after a few weeks the bandage is removed and an ulcer has developed, and an ulcer like that will take weeks and weeks and weeks to heal. Whereas, recognition of the fact that the patient's complaint of pain was an indication that something was wrong would have led to correction of the trouble.

So that if I had anything to give in the way of advice, it would be: Never neglect complaint on the part of the patient that the bandage or dressing is causing pain. Something is wrong if that is the case, because a well applied, and properly applied bandage that is not doing any damage ought to give relief instead of pain. And a second piece of advice would be to make sure that you have gotten the bones in good position, if you possibly can, particularly if the injury is in the neighborhood of one of the joints.

I am sorry I cannot agree with Dr. King that the World War has solved for us the treatment of fractures of the femur. It has not solved them for me, and our Journals would indicate wide divergence of opinion. Our war experience was certainly of great value, and has done much to reduce the percentage of bad results.

Dr. E. Denegre Martin (New Orleans): Dr. Fenner has covered the subject pretty thoroughly. However, I would like to emphasize some of the points discussed, especially with regard to the bandage. My experience has been rather extensive in this work. After my first twenty years in the treatment of fractures, I began to appreciate my mistakes. Some get along with three months.

Had I known just what slides Dr. King would show tonight, I could have contributed many more. But the one thing I especially want to emphasize is what Dr. Fenner said in regard to pain. Whenever a fracture has been set and the bandage gives pain, the fracture is in the wrong position or the bandage badly applied. When I began to

treat fractures, we had no roentgen ray. We did the best we could. In those days, when one got functional results they were pleased. Very seldom did a femur unite with less than one and one-half inch shortening. I remember my first compound fracture, in 1890. This man left the hospital with a good leg. He came in with a compound fracture of the femur, above the condyle. The next morning, the boy was comfortable and was put in a Buck's extension, the best means of treatment at our command. When Dr. Parham came in the morning, we decided to make an effort to save the leg as the boy was in excellent condition. Dr. Parham had just introduced aseptic surgery into the hospital. We treated the case accordingly and that boy of seventeen years walked out three months later with a perfectly good leg.

I became very much interested in the treatment of fractures at that time and I remember reading a paper in 1908 before the American Medical Association, calling attention to the lack of treatment of fractures in the Hospitals. It was discussed by Murphy, Ochsner and others, and all agreed we were not giving the time to fractures we should. The man who specializes in fractures today has a problem which requires more attention to detail than any other. It requires constant watchfulness. The men who are succeeding today are giving every moment of their time to fractures.

Fractures about the joints are always more complicated.

Never resort to open reduction unless forced to. Most of those who come to us now were treated by the inexperienced. They come in such condition that the limb is practically useless. In open reduction you cannot succeed unless the material used will hold the bones in apposition until union is firm enough for the weight to be carried. I have removed at least twenty plates put in and held with short screws. At first I did not realize that in using machine screws the hole had to be drilled with a machine drill one thirty-second of an inch smaller than the screw. Sometimes manipulation during the application of the plaster bandage would cause them to pull out. But since the introduction of long screws (Dr. King will bear me out), I have not had to remove a single plate. In one instance, the screws held while the plate broke in half. That is because the screws, if properly applied, will hold firmly. Treatment for fracture of the patella succeeds now because up to this time no material used held long enough to get bony union. It takes a fracture of the patella from four to six months to ossify.

Dr. A. C. King (closing): I want to get straight on the remark quoted by Dr. Fenner that the World War has taught us to handle fractures of the femur. The War brought us up with a jerk and we began to interest ourselves in the treatment of all fractures.

I want to compliment the members of the New Orleans profession on their results in fractures. I have visited hospitals in New York City and looked into the fracture situation and I got a good deal out of it and found out this: that with all their facilities, their results are no better than ours here, which is saying a good deal. I have visited a good many hospitals and met a good many men and am perfectly frank in making that statement. I do not want you, gentlemen, to get the idea that every time we run across a fracture we should do an open operation. Not at all, that is the last thing we want to do, and do it only when we have to. This work is in itself almost a specialty. It requires knowledge of details and knowledge of asepsis, and skill. These three things are necessary. If you do not apply skill plus the other two things, your work is certainly going to fail.

HEADACHES, CAUSES AND TREATMENT.*

ALLAN EUSTIS, M. D.

NEW ORLEANS.

Headache is a symptom so universally complained of that it is often ignored, yet frequently the correct diagnosis of a case may be more promptly defined if at once an attempt is made to determine the cause of the headache. As Tilney[1] of New York, so aptly states, "Headache is a symptom and denotes disease. * * * Headache in every aspect is a challenge." I wish further to emphasize this fact and to urge the necessity of a thorough diagnostic investigation before treatment of this symptom is instituted. Too often relief of the symptom is accomplished with subsequent dire results to the patient who continues to suffer from a disease which might have been arrested had its recognition been more prompt. The very commonness of the symptom has made us neglectful of its importance.

In a survey of 500 consecutive cases, (see Chart I below) the histories being

*Read before the Section on Medicine at the Sixty-fifth Annual Session of the Mississippi State Medical Association, Jackson, April 14, 1932.

taken from my office files, and representing ambulatory patients, headache was complained of in 249, or 49 per cent of the cases; 21, or 4.2 per cent of patients coming to my office for routine diagnostic investigation complained of habitual headaches; 169, or 33.8 per cent had frequent headaches, while 55, or 11 per cent occasional headaches. In 255, or 51 per cent, headache was not listed as a complaint, and it is possible that many of these might have overlooked mentioning

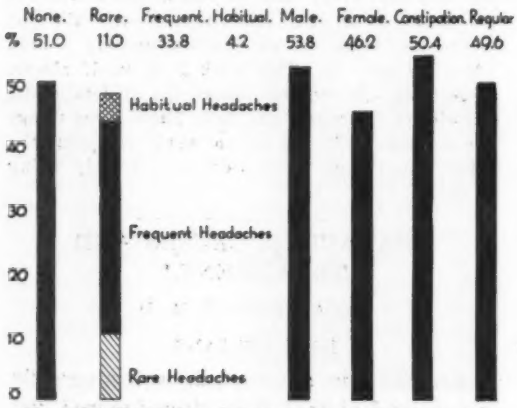


Chart I. Illustrating frequency of headaches in 500 routine office histories.

this symptom. On account of the generally accepted idea that headaches are of more frequent occurrence in females, than in males, it is of interest to note that 269, or 53.8 per cent, were males and 231, 46.2 per cent, were females. In a statistical study of 250 other patients complaining of headache, 107, or 42.8 per cent, were males and 143, or 57.2 per cent, were females. Grouping the two series we have 750 patients of whom 376, 50.1 per cent, were males and 374, or 49.9 per cent, were females, so, I can but conclude that headaches are as frequent in man as in woman. My work being of a general diagnostic character with no gynecological, obstetrical, or pediatric cases, these statistics are fairly representative of the general run of ambulatory cases.

In a review of the literature on headache, which is monumental, frequent reference is made to Auerbach's[2] classification of headaches in his monographs published in 1912 and 1913:

TABLE I

A—Independent headaches:
1. Migraine
2. Neurasthenia
3. Rheumatic

B—Headaches with disease in the several organs:
1. With disease of the brain:
   - a Brain tumor
   - b Brain abscess
   - c Hydrocephalus
   - d Meningitis and encephalitis
   - e Hematoma of dura mater
   - f Cerebral lues (progressive paralysis)
   - g Cerebral arterio-sclerosis
   - h Disturbance of cerebral circulation from disease of heart and lungs
   - i Hysteria
   - k Epilepsy
   - l Traumatic
   - m Other brain and spinal cord diseases
2. With disease in the organs of special sense:
   - a Eyes
   - b Nose, pharynx, also teeth
   - c Ears
3. With disease in the gastro-intestinal canal.
4. With disease in the kidneys:

C—Headaches with general diseases:
1. Infectious diseases
2. Acute and chronic poisoning
3. Constitutional diseases

D—Combinations of the different forms of headache

Inasmuch as he starts his classification with, "Independent headaches" comprising migraine, the neurasthenic headache and the rheumatic headache,—three cloaks for ignorance in the light of our present day knowledge—it is permissible to present the following classification:

TABLE II

A—Due to lesion in the head:
1. Lesions of the skull:
   a Gumma
   b Osteomyelitis, periostitis, Paget's disease
   c Malignancy
   d Traumatism
   e Sinusitis (ethmoids, sphenoids)
   f Teeth (impacted molars, apical abscess)
2. Lesions within the skull:
   a Brain (tumor, abscess, lues)
   b Meninges (encephalitis, hydrocephalus)
   c Cerebral vessels (hemorrhage, aneurism)
   d Cranial nerves (Gasserian and sphenopalatine ganglion)
   e Cerebro-spinal fluid—(spinal puncture)
   f Cerebro-spinal lues
3. Lesions in organs of special sense:
   a Eyes (glaucoma, errors of refraction)
   b Nose (vacuum headache)
   c Ears (mastoiditis)

B—Due to lesion outside of head:
1. Lesions of abdominal organs:
   a Gastro-intestinal canal
   b Liver and gall bladder
   c Kidneys
2. Lesions of cardio-vascular system:
   a Arteriosclerosis
   b Hypertension
3. Lesions of the hemopoietic system and blood stream:
   a Anemia
   b Chlorosis
   c Polycythemia
   d Infections
4. Lesions of pelvic organs:
   a Uterus and adnexia (menstrual)
   b Bladder (retention)
   c Rectum (impaction)
5. Lesions of the endocrine system:
   a Hyperthyroidism
   b Pituitary disease

C—Due to errors in hygiene:
   a Occupational
   b Acute and chronic poisoning
   c Fatigue
   d Hysteria
   e Neurasthenia?

This classification is based upon regional anatomy rather than upon disease, with the idea that if one suspects sinus involvement, roentgen-ray examinations for changes in the bony structure of the skull, in the sella turcica or in the teeth can be observed at the same time, while abdominal investigation will disclose a diseased gall bladder, chronic appendix or dilatation of the duodenum, any of which may be the cause of the headache, and thus indicate the correct line of treatment. It will be noted that allergic headaches and migraine are not included, the explanation being, that in my opinion the former is due to associated intestinal toxemia, the cause for which, in turn must be determined; while the latter, (migraine) is not a clinical entity but is merely a certain type of headache the cause for which can be found in one of the varieties of headaches in this classification. Volumes have been written on migraine and relief of the symptom has been accomplished by duodenal lavage[3], injections of peptone[4], and hosts of other procedures. Bates-Block[5] under pathological anatomy of migraine lists the several causes of death in autopsied cases as 'thrombosis of cerebral vessels, tumor in the neighborhood of third nerve, fibro sarcoma attached to the third nerve, syphilitic or tubercular exudates at the base of the skull, tumor of the pituitary region, and even dilatation of the stomach." It is evident therefore, that migraine is simply a periodic headache, usually hereditary, generally associated with nausea and vomiting, and due to many different causes. It is a symptom as is any other headache, and is not a disease. Many cases in my experience, as also in that of Hunt[6], are due the effects of intestinal toxemia. It will be noted also, that an interrogation mark follows "neurasthenia", included for the bene-

fit of those who see such cases. I have not seen a case of "neurasthenia" in the past twenty years, but I can remember many cases so-called in my early practice, which today I would recognize as cases of hyperthyroidism, or other endocrine disturbances. So, I believe, that the sooner this term is changed to "undiagnosed", the shorter the time until the practice of medicine will become a true science rather than an art. Interesting examples of some of the different types of headaches which have been observed may be permissible.

CASE REPORTS

LESIONS OF THE SKULL

Case 1. Carcinoma of the skull: Mrs. B., aged 35 years, first seen by me in 1919 when she was complaining of periodic occipital headaches, associated with nausea and vomiting, scotoma, dysmenorrhoea, and constant gastric distension. These symptoms were promptly relieved after Dr. Allen removed a chronic appendix, a diseased right tube and a cystic right ovary. She remained well until 1923 when Dr. Simmons of Alexandria removed a malignant growth from her right breast, after which she continued in good health and was free from headaches until November, 1927, when there was a recurrence of headaches and some dyspnea was noticed on exertion. I saw her again in March, 1928, when the headaches were excruciating, and there were symptoms of marked cardiac decompensation. On examination a small nodule could be felt on top of the head; it was acutely sensitive and gave the typical appearance in the roentgen ray film of metastatic carcinoma of the skull. Roentgenogram also showed metastasis in the lungs.

Case 2. Chronic Sinusitis (sphenoids, ethmoids, frontal and maxillary): Mrs. G., aged 45 years, in October, 1930 complained of severe headaches and scotoma, the headaches at this time being situated in the occipital region but radiating to both temporal regions; extreme nervousness and a mucous colitis. She had been treated as a neurasthenic for fifteen years. Examination revealed a spastic colon, hemorrhoids and a high grade intestinal toxemia; her urine showing a plus six indican reaction. Basal metabolic rate was minus 35. With thyroxin, a diet to overcome the intestinal purtrefaction and colonic flushes, she improved greatly, the headaches recurring only when she failed to follow the diet with reappearance of indicanuria. On December 22, 1930, when she had a slight nasal hemorrhage preceded by severe headache for two days but with negative indican test, she was referred to the late Dr. Lynch who found some involvement of the right sphenoid. Severe headaches continued notwithstanding local treatment by Dr. Lynch, so on January 7, 1931, he performed a radical operation on the right sphenoid. At operation the floor of the sphenoid was very much thickened with polypoid degeneration of the mucous membrane of the sinus, evidence that infection had been long standing. For a few days she was free from headaceh until she developed symptoms of infection in the right maxillary sinus which necessitated making an intranasal opening into this sinus with evacuation of pus. After several months lavage and constant attention to the intestinal canal, and withdrawal of an abscessed tooth, she was relieved of headaches. During the summer of 1931, while visiting in Asheville, N. C., she contracted a cold with a return of headaches and Dr. Swan washed out her antrum with recovery of much pus, which was followed by complete relief from headache. She remained fairly free from headaches with frequent lavage of the antrum by Dr. Lejeune, until October 16, 1931, when she had another respiratory infection with a return of severe headache. Very little pus could be washed from the antrum but a roentgenogram of the sinus after the installation of lipiodol showed the cavity almost entirely obliterated by a tumor mass, most probably polypoid, but possibly malignant. On October 26, 1931, a radical operation was done on the right antrum with removal of a large quantity of polypoid material from the cavity. An orbital cellulitis followed, complicated by empyema of the right frontal sinus, again causing severe headache from which there was no relief until a radical operation was performed on the right frontal sinus with evacuation of pus under pressure from this sinus. Convalescence from this operation was accompanied by relief from headaches for a few days only, when pain in the distribution of the supra-orbital nerve became intense. On account of the unstable state of her nervous system it was a great temptation to consider this last headache as of neurotic origin, but careful examination by Dr. Daspit led us to conclude that the supra-orbital nerve was caught in the scar of the incision into the frontal sinus. Section of the nerve by Dr. Isidore Cohn relieved the pain over the distribution of the supra-orbital nerve, but she still complains of headache, which Dr. George Hardin considers is due to the marked muscle imbalance in the right eye. Certainly she has less headache since wearing the corrective glasses, but I am not at all convinced that the present seat of her trouble is not in the Gasserian ganglion involving the optic branch, but not the dental branches. Time only, will establish this fact, when resort to severance of the sensory branches will have to be considered.

This history has been given in such detail as an example of the havoc which may be wrought by treating "neurasthenia."

LESIONS WITHIN THE SKULL

Case 3. Brain Tumor: Mrs. S., aged 53 years, examined January 28, 1928, has complained of headaches for twelve years and for the past four months of acid regurgitation, constipation and gradual loss of vision. At time of examination a chronic gall bladder was found; systolic blood pressure of 230, no palpable arterio-sclerosis, and an excretion of 70 per cent of phenol-sulphonephthalein in two hours, with a normal blood chemistry. Dr. Bruns found retinal hemorrhages in both eyes with exudate and double choked disc. This should at once have pointed to the possibility of a brain tumor, but on account of the hypertension and the mildness of headaches, which were periodic, the retinal hemorrhages were ascribed to the hypertension. She was allowed to go home and an attempt was made to overcome her hypertension by eliminative treatment and a low protein diet which was successful, the blood pressure ranging from 140 to 160. Her vision, however, became progressively worse and I saw her again two months later, when she was almost totally blind in one eye. A roentgenogram of the sella turcica revealed an erosion of the floor, absorption of the posterior clinoid process and the anterior clinoid processes irregular in outline. Dr. Henderson considered the changes typical of a neoplasm occupying the floor of the middle fossa. This accounted for all of her symptoms, and I now feel that if I had paid more attention to the history of headache for twelve years, together with a proper consideration of the presence of a double choked disc from pressure on the optic chiasm the correct diagnosis could have been made two months sooner. Unfortunately, this would not have prevented her ultimate death from brain tumor.

Case 4. Meningitis: H. R., aged nine years, was referred to me as a case of diabetes with impending coma on account of glycosuria, acetonuria, agonizing headache and somnolence. When seen the most prominent symptom was the excruciating headache, the boy grasping his head with both hands. Opisthotonos was marked and Kernig's sign positive. Puncture of the spine revealed a pneumococcal meningitis secondary to an otitis media purulentia, which he had suffered from three weeks previous. In this case, I am sure, had the home physician properly evaluated the significance of the headache, other signs would have earlier made the diagnosis clear.

Case 5. Cerebral Hemorrhage: Miss F., aged 15 years, was brought to the Baptist Hospital July 24, 1931, in a semi-comatose condition. The history, obtained from her mother, was that she had worked the previous night until twelve o'clock and had returned home without complaint. She arose about nine o'clock, cooked and ate an egg for breakfast but soon vomited it. At eleven a. m. she cried out with sudden headache but was able to run upstairs to her bedroom where she collapsed into unconsciousness. I saw her two hours later. Physical examination revealed a well developed young white girl, groaning and in semi-conscious condition. She could be aroused by inhalation of ammonia. No paralysis, but frequent extension and flexion of arms and lower limbs. Pupils were equal and responded to light. Patellar reflexes were normal. Examination otherwise negative. Blood pressure 115/70. A tentative diagnosis of major hysteria was made, but after a catheterized specimen of urine showed large quantities of sugar preparation for spinal puncture was begun. She died before this could be accomplished, three hours after the onset of headache. Autopsy by Dr. Hauser, Coroner, revealed edema of lungs and hemorrhage into the cerebellum and fourth ventricle, coming from a softened area in the cerebellum of broken down tissue, most probably a broken down gumma. No Wassermann or microscopic examination of the tissue was obtainable. This case illustrates the importance of considering any sudden and severe headache as possibly of major import, and when sugar is present in the urine, a spinal puncture should be promptly made, when pure blood, or blood tinged spinal fluid will often be obtained.

LESIONS IN ORGANS OF SPECIAL SENSE

Case 6. Miss G., aged 64 years, first seen by me May 25, 1923, complaining of blindness in right eye, severe headaches for four months. Retinal hemorrhage was diagnosed by oculist seven days previous. Sixteen years before she had suffered from severe headaches which were relieved after Dr. Matas operated upon her gall bladder and removed 38 stones. She had had no severe headaches until four months ago. There were no gastro-intestinal symptoms, blood pressure 175/80, moderate arterio-sclerosis, urine negative except a plus 5 indican reaction. Phenol-sulphonephthalein excretion was 55 per cent in two hours. Treatment of the intestinal toxemia relieved her of headaches and she remained in excellent health, with a systolic blood pressure of 150 to 175. In 1929 she again began to complain of severe headaches, especially in the left orbital and supra-orbital region, which were relieved after Dr. Buffington removed the eye for an acute glaucoma. I have seen her at infrequent interva's and she has remained free from headaches by constant attention to her intestinal canal, and when last at my office on January 2, 1932, her blood pressure was 170/80, and she rarely had a headache.

HEADACHES DUE TO LESION IN THE NOSE

These are numerous if the sinuses are considered in connection with the nose, an example being Case 2, cited above, but it is well to mention the so-called vacuum headache of Sluder[7] relieved promptly by shrinkage of the nasal mucosa. Also, may be mentioned headaches due to irritation in the sphenopalatine ganglion, and which closely resembles at times, so-called "migraine." Barlow[8] reports twelve such cases relieved by the local application of cocaine in the region of the sphenopalatine ganglion followed by application of 50 per cent solution of nitrate of silver.

HEADACHES DUE TO LESION IN ABDOMINAL ORGANS

Gastro-Intestinal Canal—Portis[9] reports three cases of migraine with dilatation of the duodenum; two relieved by surgery and one by an abdominal belt, and I have seen several, all of whom were surgical cases. A chronic appendix with associated intestinal toxemia is often the causative factor in "sick" headaches, relief of which is prompt after appendectomy. Intestinal toxemia is manifested by headaches, usually occipital in character in 80 per cent of patients suffering from intestinal stasis, as evidenced by a statistical study of 300 cases made by me in 1913. In my experience intestinal toxemia is a contributive factor in practically all headaches, i.e. a patient with a chronic gall bladder, or a chronic sinusitis may be fairly comfortable until absorption of putrefactive material from the intestinal canal may induce an agonizing headache. Treatment of the intestinal toxemia is based upon the pathology present in the intestinal canal[10] assisted by a low protein diet, acidophilus buttermilk, proper exercise and fresh air.

In the literature, many cases of "migraine", reported as relieved, follow the treatment of a case of intestinal toxemia. In the investigation of a headache a test for indican in the urine is as important as examination of the sinuses or eyes, and frequently the latter can be dispensed with when a heavy indicanuria is found with proper eliminative treatment. In a study of 500 cases taken from my office files, all complaining of headaches, 248 or 49.6 per cent gave a plus 8 indican reaction; 90 or 18 per cent gave a plus 6 indican reaction; 47 or 9.4 per cent gave a plus 5 indican reaction; 45 or 9 per cent gave a plus 4 indican reaction; 44 or 8.8 per cent gave a plus 3 indican reaction; 26 or 5.2 per cent gave a plus 2 indican reaction.

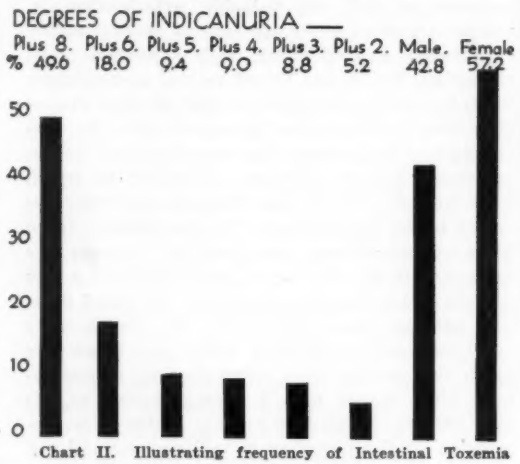


Chart II. Illustrating frequency of Intestinal Toxemia in 500 patients complaining of headaches.

A plus 2, or plus 3 reaction is not considered of clinical significance, but one is at once struck by the fact that 86 per cent of patients complaining of headache, show a plus 4 or heavier reaction for indican in the urine, corresponding fairly well to the percentage (80 per cent) of 300 patients with symptoms of intestinal toxemia who complained of headaches studied several years ago, and who were relieved of their headaches by treatment of the intestinal toxemia.

LIVER AND GALL BLADDER

All headaches which I encounter in which the liver or gall bladder is the offending organ have an associated intestinal toxemia and can retain their diseased gall bladder or liver with freedom from headaches if the intestinal toxemia is controlled, attention to which I called in 1918.[11]

Time will not permit a consideration of other varieties of headaches listed in the above classification, but under chronic

poisoning we must consider those due to inhalation of illuminating gas. Since the widespread use of natural gas in this section of the country, and on account of its lack of odor, with frequent escape from cooking stoves and heaters this type of headache must be regarded. With the increase of women smokers in the present day, chronic nicotin poisoning must also be considered.

TREATMENT OF HEADACHES

Treatment consists in determining the cause of the headache and removal of same, which often cannot be decided on until a careful history is taken and a thorough diagnostic study made. "The physician who makes a diagnosis of headache without effort to know the cause and offer relief is unjustifiably shirking a tedious problem.[8]"

SUMMARY

1. A classification of headaches is presented, based upon regional anatomy, rather than upon the associated disease.

2. Headaches are complained of by 49 per cent of routine office patients in a general diagnostic practice.

3. Headaches are as frequent in men as in women

4. Eighty-six (86) per cent of patients complaining of headaches have an associated intestinal toxemia.

5. A careful history and thorough diagnostic study should be made of every patient complaining of headache.

6. A plea is made to abandon the term "migraine" as a clinical entity, substituting the term "undiagnosed."

The preparation of this article has entailed much labor by my assistants, Miss E. V. Monroe and Miss Bertha Brechtel and grateful acknowledgment is herewith made of their intelligent and helpful cooperation.

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SOME DEDUCTIONS FROM THE PHYSICAL EXAMINATION OF 1,850 INDIVIDUALS.*

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AND

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NEW ORLEANS.

One of the large industrial corporations operating in Louisiana and two neighboring states requires that every applicant for employment satisfactorily pass a physical examination, and last year, in addition to this, gave to a large group of its employees routine health examinations. In making these examinations we decided to go beyond usual routine in order to secure some data that would cover points that had previously interested us. This additional investigation covered particularly the effect of various factors on blood pressure and pulse rate, the status of vaccination and smallpox in the group, and when about half through the series of examinations we had our interest aroused by certain findings in regard to mumps.

BLOOD PRESSURE AND PULSE RATE

The following routine was used:

(1) First class mercury manometers were employed.

(2) Upon entering the office, the applicant was seated and a history taken. This required about three minutes and allowed

*Read before the Orleans Parish Medical Society, November 23, 1931.

an opportunity for the individual to recover from the effort of walking into the office.

(3) Blood pressure and pulse was then taken and recorded.

(4) The general physical examination was made.

(5) Blood pressure and pulse rate were again carefully determined and recorded.

(6) In the examinations for employment the applicant was at first treated in a brusque manner (as is so often the custom of examiners), but later during the examination every effort was made to restore him to a pleasant and comfortable frame of mind. In the routine health examinations, no effort was made to produce any psychic impression but the examinee was treated in a diplomatic way throughout.

We had expected from previous experience that there would be a considerable difference between the data obtained at the beginning and at the close of the examination, as the findings would be affected by the mental state of the one being examined.

The first series was that of 50 applicants for employment. These naturally had their feelings very much involved as their securing a desired position depended upon their passing this examination. The findings were as follows:

DETAIL

Men not over 20 years (11):

Average reduction in systolic pressure ..... 13.09 mm.
Average reduction in diastolic pressure ..... 4.5 mm.
Average reduction in pulse rate 3.2

All systolic readings were reduced except one and this was made after the applicant had been told that he had failed to pass the examination.

All diastolic readings were reduced except three, the only material elevation being in the one who had been told that he had failed to pass.

All pulse readings were reduced except two, both of which were in the case of persons who had been told that they would not pass.

Men 20 to 30 years: (24)

Average reduction in systolic pressure ..... 12.6 mm
Average reduction in diastolic pressure ..... 6.8 mm
Average reduction in pulse rate 3.7

All systolic readings were reduced but two and they were slightly elevated.

All diastolic readings were reduced but three and the only one of these that was material was where an abnormally low diastolic reading came up to normal.

All pulse readings were reduced except four—the changes in these four were very slight.

Men over 30 years: (12)

Average reduction in systolic pressure ..... 9.5 mm
Average reduction in diastolic pressure ..... 7.6 mm
Average reduction in pulse rate 1.3

All systolic readings were reduced except one, which showed a slight elevation.

All diastolic readings were reduced except one.

All diastolic readings were reduced except five, which showed slight elevation or no change.

Women: (4)

Average reduction in systolic pressure ..... 13.4 mm
Average reduction in diastolic pressure ..... 2.0 mm
Average reduction in pulse rate 6.0

All systolic readings were reduced.

All diastolic readings were reduced, but two.

All pulse readings were reduced.

Negroes: (2)

Average reduction in systolic pressure ..... 15.0 mm
Average reduction in diastolic pressure ..... 9.0 mm
Average reduction in pulse rate 5.0

All systolic readings were reduced.

All diastolic readings were reduced.

GENERAL FINDINGS

Totals:

There was an average reduction in systolic pressure of.....12.2 mm

Average reduction in diastolic pressure ..... 6.4 mm

Average reduction in pulse rate 3.5

Ten per cent showed a reduction in systolic pressure of 30 mm. or more.

Thirty per cent showed a reduction in systolic pressure of 20 mm. or more.

Sixty-eight per cent showed a reduction in systolic pressure of 10 mm. or more.

Following this work on the applicants for employment, we prepared corresponding records on 1,800 routine health examinations. In these cases the same psychic factor did not obtain and there was only the nervousness incident to any regular examination.

The gross findings were as follows:

Systolic Pressure:

1,231 showed a decline in the second reading, as compared to the first;

466 showed an increase;

1 unchanged.

Diastolic Pressure:

654 showed a decline;

462 showed an advance;

679 no appreciable change.

Pulse:

1,344 showed a decline;

359 showed an advance;

97 no appreciable change.

The total reductions in pressure subtracted from the total advance gave for the whole group the following results:

Decline in systolic pressure.... 3.97 mm

Decline in diastolic pressure.. .42 mm

Decline in pulse ..... .343

GENERAL FINDINGS

Of these 1,800 employees, over 17 per cent showed a change of 10 mm. or over in systolic blood pressure between the first and second reading; over 6 per cent showed 20 mm. or more, and over 2 per cent showed variations of 30 mm. or over. The detail of this was as follows:

Men Under 30 Years:

Over 17 per cent showed 10 mm. or more variation of systolic pressure.

Over 12 per cent showed a variation of 10 or more in pulse.

Men Over 30 Years:

Over 16 per cent showed a variation of 10 mm. or more in systolic pressure.

Over 6 per cent showed a variation of 10 in pulse rate.

Women (White and Colored):

Over 29 per cent showed a variation of 10 mm. or more in systolic pressure.

Over 14 per cent showed a variation of 10 or more in the pulse rate.

Negro Men:

Over 22 per cent showed a variation of 10 mm. or more in systolic pressure.

Over 8 per cent showed a variation of 10 or more in pulse rate.

CONCLUSIONS

(1) That one blood pressure reading and pulse count gives insufficient data on which to base a determination of the individual's normal pressure and pulse rate.

(2) It might be advisable to have all examiners take a blood pressure reading and pulse count at the conclusion of an examination, after effort has been made to restore the applicant to a normal nervous balance.

(3) Young men are more susceptible to change than older men.

(4) Women show slightly more variation in both blood pressure and pulse than men.

(5) Negroes showed a wider variation than whites.

(6) The effect upon the blood pressure and pulse rate is remarkably effected by the purpose of the examination and other factors that influence the mental attitude of the examinee.

SMALLPOX

In this group of 1,800 health examinations, 107 (nearly 6 per cent) gave a history of having had smallpox. None presented positive evidence of having been successfully vaccinated before having the disease, though the history in one case was

somewhat uncertain. These 107 cases of smallpox were rather evenly distributed through the past years; therefore, we concluded that smallpox is still an active factor in State medicine and calls for continued efforts by the medical profession looking toward universal vaccination.

MUMPS.

Records were kept in regard to this subject in 866 examinations. Over 600 gave a history of having had the disease. In no instance where the individual had contracted the disease before the age of puberty was there any history of complications. In the case of those who had developed the disease after puberty, 20 showed atrophy of one testicle, 12 on the right, 8 on the left. One showed bilateral atrophy with other evidences of eunochism.

Our conclusion was that until we reach that high plane of national health where epidemic disease is a matter of history only, it is advisable to expose all children to mumps during the period of early childhood.

From a study of the whole series, we were confirmed in our opinion that universal health examinations would prolong life, promote comfort and increase efficiency almost beyond conception.

ASTHMA IN CHILDREN, FROM THE VIEWPOINT OF THE PEDIATRICIAN AND THE GENERAL PRACTITIONER.*

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My purpose in this discussion of asthma in children is not to report any new discoveries but to emphasize the special significance of heredity for the diagnosis and treatment of the condition, and to call attention to the fact that the general subject of atopy, or allergy, is not so complex that it cannot be comprehended and dealt with intelligently by all who are competent to treat disease.

In any present day discussion of asthma it is virtually impossible to avoid reference to other manifestations of allergy, or atopy. The term asthma was derived from a Greek word meaning "panting." Dorland's[1] definition is that asthma is a disease marked by recurrent attacks of paroxysmal dyspnea, with wheezing cough and a sense of constriction due to spasmodic contraction of the bronchi and irritation of the bronchial mucous membrane. In other words, Dorland classed asthma as a form of neurosis. The present day, or modern definition is that asthma is a disease of definite etiology in most instances characterized by symptom complex of difficult breathing particularly, prolonged expiration, cough and sometimes cyanosis. Nasal symptoms may occur, as in hay fever. In fact, many authors have come to speak of hay fever as asthma of the upper respiratory tract.

As you probably know, von Pirquet[2] first invented the term "allergy" from the Greek words "altered reactivity." This author intended his word to signify only increased reactivity; later authors, as Deorr[3], have included in the meaning of the term conditions of lessened reactivity. By many the word "atopy" is now being used as a term to cover the several inherited conditions of human sensitiveness, such as asthma, hay fever, and most certainly specific eczema.

A peculiar characteristic of many asthmas is their seasonal incidence. In other cases the asthma appears to be initiated by certain environmental conditions, as the proximity of animals. Again, the attack may follow the eating of certain foods. In a large number of cases we find an hereditary taint, frequently deriving through both parents. These various factors, when coordinated, indicate that atopy, or what is generally termed allergy, is involved in practically all asthma.

We have come to accept, therefore, that

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two primary factors determine the asthmatic seizure. One factor is an hereditary tendency to become allergic. The other factor is the allergin or trigger which sets off the loaded gun. The gun is loaded by the physico-chemical imbalance pre-existing in the body cells. Milton Cohen[4] has drawn an apt simile in a recent article in Hygeia. He states that the rash which develops in many people after eating strawberries is due not to any poison *per se* in the strawberries but to a condition in the body of the person who eats them. The rash occurs because the body cells have been so changed that the strawberries act like poison. Such cells are said to be sensitized or in the allergic state of physiologic imbalance. It is well known that if a guinea pig is given a hypodermic injection of egg white no effect is observed; but if a second injection is given 14 days later it will prove fatal. The guinea pig has developed an interim sensitization and a disturbed allergic imbalance to the protein of egg white. Postmortem examination discloses that death was caused by over-distension of the lungs. The guinea pig died of anaphylactic shock. The similarity between the symptoms shown by the guinea pig prior to death of anaphylactic shock and symptoms exhibited by the asthmatic was first pointed out in 1910[4].

The allergic individual may show a different reaction to each type of stimulus. The reaction may appear in response to a very small stimulus and differ from the toxic action of the allergin when given in large doses. The reactions appear to depend both in site and intensity, upon three factors: first, individual susceptibility; second, specific cellular susceptibility; third, rate of absorption of the allergin. Specific substances that can induce allergic manifestations are called characteristic allergins. To repeat the analogy, the allergin is the trigger to the gun. These allergins enter the body spontaneously in four ways; through the mouth and nose during breathing; through the digestive tract; through the skin; and by bacterial infection. The deliberate injection of antitoxin does not induce true allergy, but sometimes anaphylaxis.

I have been asked whether the older term "exudative diathesis" is not as significant and descriptive as the more modern phrases "physico-chemical imbalance" or "allergic imbalance." I see no reason why it is not just as clear in every respect. The important concept to be kept clearly in mind in the use of either expression is that there must be first a definite cellular imbalance before the various manifestations of anaphylaxis or sensitivity can occur. The normal individual, in physico-chemical, or allergic, balance, can withstand any or all allergins with no untoward results.

CHART I

AGE INCIDENCE OF ASTHMA

Years	Per Cent
0-10	33.7
10-20	14.1
20-30	17.5
30-40	16.3
40-50	10.5
50-60	5.7
Over 60	2.1

The subject of asthma is of special interest in children because of the age incidence. As is shown in Chart I, 33.7 per cent of all asthmas are manifested during the first ten years of life. As the child grows older the susceptibility or age incidence decreases, until after 60 years only 2.2 per cent develop asthma.

As to hereditary predisposition, there is a known positive family history of allergy in 70 per cent of the asthma in children. In 50 per cent of the cases the positive family history is unilateral; in 20 per cent, the inheritance is bilateral. Furthermore, the family history cannot always be relied upon as negative because the parents have never evidenced allergic manifestations. In some instances the parents may be allergic individuals who, up to the time the child is affected, have never received the stimulus necessary to produce disturbances of this type in themselves. In other words, an

actual bilateral transmission of allergic imbalance might not be obvious.

Transmission appears to be twice as frequent through the female as through the male, the diathesis being transmitted as a mendelian dominant. It is interesting, also, that the larger the inheritance the greater the tendency to multiple sensitization and earlier manifestation of symptoms. The localization of symptoms, however, bears little relationship to the character of inheritance.

SENSITIVITY

The infant may become actively sensitized *in utero* through the mother's overindulgence in certain protein foods during the ante-parturition period. Also, while being fed on the breast the infant may exhibit some symptoms of hypersensitivity which disappears after removal of a certain protein from the mother's diet. Proof exists that foreign proteins are able from birth to pass unchanged into the circulation through the normal alimentary mucosa. It is an interesting fact that the asthmatic may show four plus reaction to food tests as well as four plus reaction to inhalants; but when the various irritants affecting the respiratory tract have been removed, or resistance to these inhalants raised by injection or other means, the four plus foods may produce no symptoms whatever. This fact may indicate that the allergin which produces symptoms comes mainly through the upper respiratory mucous membrane, or merely that with relief in one direction the food allergins alone do not exceed the resistance threshold of the organism. The second alternative is the more hopeful one, since it suggests the possibility of full relief with removal of only a part of the allergin load.

Pathological conditions of mucosa, stomach, and bowels may impair the contractive ability of these parts so as to allow foreign proteins to pass unchanged into the blood. Mucous membrane permeability may vary with the seasons; particularly, wet and cold weather may increase the membrane premeability. Previous illness appears to play a part. There are at least three conditions in which the relationship between infection and allergy is demonstrated. An acute infection often ushers in a sensitivity, and the dormant allergic state becomes active because of lowered resistance. Again, in the absence of known hereditary influence sensitivity development begins in a damaged state of mucous membrane. Finally, because of the allergy there is more susceptibility to infection. Something of a vicious circle may be instituted, the mucous membrane of the allergic becoming constantly irritated by specific proteins.

The nose and throat of the asthmatic child play their part. In a very large percentage of asthmatic children the tonsils have been removed. Most observers believe that tonsils and adenoids have little to do with the development or cause of asthma. Sinus disease is a frequent complication. Some authors hold that sinus disease is the result of allergy and not the cause. In a recent discussion[5] Dr. Dean of St. Louis stated that allergy could cause sinus disease, and that where smears of the discharge of infected sinuses in an infant show 10 per cent of eosinophiles allergy is an important causative factor. The majority of authors believe that there should be no difference in the treatment of infected sinuses of the asthmatic and nonasthmatic. In other words, removal of foci of infection is as beneficial if not more so to the asthmatic as to the normal child. While we cannot say that drainage of the sinuses will cure an asthmatic child, we can say with assurance that a child with chronically diseased sinuses stands a poorer chance of ridding itself of asthma.

Peshkin[6] in a series of cases from the asthma clinic of Mt. Sinai Hospital, New York, found a very large percentage of definite asthmatics. He reports that the incidence of tuberculosis in these asthmatics approximates the normal ratio, and the intradermal test gave no more positive reactions in the asthmatic than in normal children living under the same hygenic conditions.

SYMPTOMS

Before considering in more detail the symptoms of asthma, something should be said of the prodromals seen in the allergic child. One of these is eczema of the skin, sometimes a simple urticaria, sometimes a congenital ichthyosis. The symptoms come on quite early. In a large percentage of cases the eczema baby later becomes asthmatic. There are symptoms of the upper respiratory passages; itching of the nose; snuffling; rhinitis, and sneezing. The lower respiratory tract may also manifest such symptoms as rapid breathing, wheezing cough, repeated colds. The alimentary tract reflects food idiosyncrasies, irregular appetite, abdominal pain, vomiting, diarrhea, train or car sickness. The nervous system is involved in symptoms of irritability, restlessness, insomnia, sick headache. The general symptoms of the genito-urinary tract are straining, frequent urination, enuresis or diuresis. Any or all of these symptoms are suggestive of allergy.

A great deal is said about the appearance of the asthmatic child. In the older asthmatic there is usually a cyanotic tinge of the lips, widening of alaenasi on inspiration, frequent paranasal depression, with the chest increased in anterior and posterior diameter. Often the pigeon breast and sometimes the dorsal kyphosis is present.

It has been my experience that the child with fair hair and blue eyes is somewhat more commonly affected with asthma and eczema. In this type there is a strong hereditary predisposition with very often positive skin tests. The brunette more often shows an asthmatic bronchitis following a severe illness, when the hereditary history is not so obvious.

The capriciousness of asthma is a matter of common experience. The time of onset is usually in the early hours of the morning, and it is a peculiar fact that once a definite hour is established it becomes fixed. This may be due to pollens. There is also the week-end periodicity. During the week the child is in school, under regular regime, and probably less exposed to grasses and pollens.

Locality frequently has a very marked effect upon the asthmatic; sometimes a change from one locality to another will clear up the condition. Winter is commonly the season when most asthmatics are seen. Another fact of interest is that symptoms shown in one attack may differ very materially from those of a subsequent attack.

In the early literature the French refer to the asthmatic child as "superier degeneri," or "superior degenerate," because so many are brilliant in school work yet lack the stability and are not so dependable in habits as their less brilliant brothers.

It is appropriate here to cite the five distinct types of asthma as described by Bray[7] of London.

1. *Acute Bronchitic Type of Asthma.* The clinical picture in this type resembles closely bronchial pneumonia, or bronchitis, which comes on with great suddeness. The attack begins with frequent, paroxysmal sneezing. The temperatue is often elevated two degrees or more. There is a persistent, hard cough, and sometimes a cyanosis which is more or less alarming. Physical examination reveals markedly prolonged expiration. Usually many rales of all types are heard, generally over the chest. These symptoms may be of brief duration or run a typical course of bronchitis. A feature more or less characteristic is that the attacks are recurrent.

2. *Asthmatic Bronchitis, or Bronchitis with Superadded Asthma.* This type of asthma usually follows an ordinary respiratory infection or an exanthem, and each subsequent attack or series of attacks is ushered in by a cold in the head. This is the severe type and occurs usually in the winter when bronchial infections are most prevalent. It is the type of recurrent bronchitis so often seen in the young child. Dyspnea usually appears in from 24 to 48 hours after the cough. Secretion is usually abundant. Auscultation detects pro-

longed expiration, accompanied by whistling rales in all portions of the chest. Very often the child is relieved by vomiting a large amount of mucus. Sometimes the attacks may last for weeks. Relapses are very frequent. It is very difficult to elicit positive skin tests in this type of asthma.

3. *Bronchial Asthma.* This is more of a true asthma and is rarely seen before the fifth year. The true bronchial asthmatic attack usually begins at night, the victim awakening with a stuffy, suffocative feeling, and clinging to the back of the bed for support. Dyspnea is intense, with little or no cough. Expiration is difficult. The face has a pale, anxious look. When the attack begins the subsequent rales begin to appear. Periodicity is characteristic. Often there is little cessation between attacks. In other instances bronchitis may supervene. The skin tests are usually easy to elicit, but are not of practical importance.

4. *Coryza Asthma, or the Hay Fever Type.* According to both Bray[7] and Scheppegrell, 5 per cent of attacks of hay fever come on before the fifth year and are not recognized, being mistaken for simple colds. True hay fever, seen during the summer and autumn, is due to pollens, odors, or emanations, and does not occur before the fourth year. Coryza asthma is characterized by itching of the nose, watery nasal discharge, and violent sneezing followed by difficult breathing.

5. *So-Called Asthma, Eczema Syndrome.* This occurs in early childhood, and is seen chiefly upon the face and the flexures of the arms and legs. Sometimes there are complications of dry, ichthyotic skin. In the fat child the lesions may assume more of a weepy character. In spite of treatment, as a rule these manifestations remain for about two or three years improving in summer and getting worse in cold weather. There is also a non-seasonal tendency to improve and relapse. About 75 per cent of such cases subsequently develop asthmatic tendencies. In our experience the skin is very sensitive and often even a positive skin test can not be relied upon. Occasionally, however, when the skin is free from eruptions, both the scratch and intradermal tests may give valuable evidence.

Blood findings in children are not characteristic, but usually eosinophils are present during the free interval. The eosinophil count averages between 5 and 10 per cent. The sputum is not characteristic. As described for some types, the sputum is thick and tenacious; in other cases it may be very scanty and thin. Sometimes during an attack the sputum may first be thin and later thick, showing spirals and crystals. Gastric analysis frequently reveals hypochlorhydria.

TREATMENT

Treatment of asthma is based upon two considerations. First, it should be determined whether an allergic tendency exists, that is, whether the individual is in a state of allergic imbalance. This can be ascertained by including in the history careful questions as to the occurrence of early eczema, hay fever, or recurrent bronchitis in the patient, parents, and even in the more remote relatives. While I do not believe that everything is allergic, I do think that many allergic conditions are missed because of careless history. As I have stated before in this paper, many minor symptoms which certainly can not be classified as asthma are forerunners of this condition, and by early relief of the allergic imbalance of which we are thus forewarned we may often avoid the more untoward later symptoms.

Secondly, after allergy is definitely determined, we must locate the trigger or allergin. The loaded gun is not harmful until the trigger is pulled. Various considerations affect our search for the allergin. It must be remembered that lowered resistance may allow a small dose of allergin to be effective, and that repeated small or homeopathic doses may finally discharge the gun. The allergin is usually detected in one of several ways. Often the offending substance may be eradicated simply by careful observation and analysis of the pa-

tient's diet and exposure to pollens and animal dander preceding each attack. Next, we have the skin tests. Many things might be said regarding skin testing in children. Some authors have definitely stated that children react more frequently to food allergins than do adults; as the child becomes older, other factors, as pollens and dander, become more important as causative agents. Detwieler[8] claims that 4.5 per cent of the asthmas which begin in infancy yield positive skin tests; in later childhood and in young adults, the percentages are 66 to 50, respectively; whereas in asthmatics which deveelop the condition after age 45, skin tests are practically negative.

All observers agree that the intradermal technique of skin testing is most conclusive. However, because of the possibility of an existing marked sensitization, the intradermal procedure is fraught with dangers. Furthermore, the scratch method is more practicable in infants and children and suffices to detect most of the sensitizations. Intradermal testing can then be resorted to for confirmation of doubtful reactions and suspected proteins that give negative scratch tests. An attack of asthma may of itself so desensitize a child that for a time negative tests are obtained with allergins which subsequently produce positive reactions. This spontaneous desensitization does not last very long; in fact, its period may be estimated from the interval between attacks.

There is necessarily a great deal of individualism in interpreting skin tests in children. The reading, to be reliable, should be done by one person who is well acquainted with his own technique and has a definite plan for reading. Unfortunately, too much dependence has been placed upon the skin reaction when the tests have been made and read in careless manner by individuals who are not capable of carrying out the technique properly. Even when the testing is done expertly, in our experience the findings are not always substantiated by clinical results. The intradermal technique is undoubtedly more exact than the scratch method, but either procedure of skin testing is only an additional method of diagnosis not to be relied upon to the exclusion of careful observation, exacting history, and precise physical examination. All together are of great value.

The first objective of treatment should probably be considered as prophylaxis. All eczema, prurigo, itching, continued and recurrent bronchitis, prolonged coryza, or recurrent intestinal symptoms, should be suspected as potential asthma. An inquisitive history will often locate the offending agent. Perennial hay feve or asthma indicates a constant association with a responsible environment. Seasonal hay fever or asthma is due to pollens. Occasional attacks suggest contact with such offending and chance agencies as animal emanations or uncommon foods.

Again quoting Peshkin[6], he reports some 200 cases of asthma who failed to respond to any and all methods of treatment until removed to a seaside hospital. With changed environment and different surroundings, but without other change in treatment, all but 5 per cent showed immediate improvement. We have all had in our own practice the case which showed no improvement at home in spite of our best efforts, but, when the child was removed to the hospital, where there were no draperies and little furniture, improvement was immediate and as a rule continued during the hospitalization.

With regard to diet, the first obvious act is to eliminate all foods which have been proved either by clinical observation or skin sensitization tests. It has been shown that a diet whose ketogenic-ketolytic ratio is about 3:1 sometimes appears to have a beneficial effect upon the young asthmatic. Sometimes the ratio is increased even further to the point where acetone bodies are found almost constantly in the urine.

Treatment by means of injections of vaccines and various pollen extracts belongs to the field of the allergist and will not be discussed here beyond saying that frequent-

ly such treatments are beneficial. Promiscuous vaccine and pollen extract therapy is not only valueless but may be harmful.

There are certainly cases where the sensitivity is due to some form of bacteria. It is in this type of case that we have had our best results. The vaccine to be employed is best made by one of two methods. In one, some of the secretion from the sinuses, throat, or upper respiratory passages is used to make a growth upon the patient's own blood by the so-called Solak-Meyer-Cohen method. In the other, the secretion is grown upon ordinary culture media; each organism is plated out separately; an extract is made of each growth, and tested by the intradermal method. The vaccine is then compounded from all the various organisms to which the patient proves susceptible. This vaccine is given in increasing doses over a long period of time. In our own practice we have seen some very beneficial results from this mode of therapy.

With absolute cooperation by the patient and patience on the part of the physician, careful preliminary study and accurate testing with potent extracts will give good results in more than 75 per cent of asthmatics. At least six months observation will be required to control all the causes responsible for the asthma in some children. For immediate, paroxysmal relief it is unnecessary to tell this assembly that the two drugs of main value are adrenalin and ephedrine; other palliative treatment is symptomatic.

CONCLUSIONS

From the viewpoint of the pediatrist and the general practitioner:

1. Allergy plays a very important part in the asthma of children.

2. The hereditary influence, or atopy, is often neglected in the diagnosis because a proper history is not taken.

3. Asthma is not the only manifestation of allergy in children.

4. Eczema, urticaria, intestinal symptoms, often difficult feeding cases, may be the manifestation.

5. The scratch and intradermal tests are of value as diagnostic aids, but they should not alone determine the diagnosis.

6. Many allergic individuals go through life without symptoms because they never receive a threshold dose of the allergin.

7. Much can be accomplished by proper diagnosis. Accurately diagnosed cases are improved by avoiding the offending allergin or by raising resistance to this allergin by vaccines or other procedures.

8. Every practitioner should understand at least the principles of allergy.

9. Asthma particularly, and all other allergic manifestations in the child should never be considered entirely cured. There may be a remission of symptoms for years, and then a recurrence of the condition with increased intensity.

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INDISCRIMINATE MYRINGOTOMY.*

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The indiscriminate incising of the drum membrane, without comprehending the important factors indicating such a procedure, has brought about enough casualties to make us realize that injudicious myringotomy has no place in otology.

The general practitioner and modern pediatrist are confronted with aural problems in routine practice, and should be com-

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petent to distinguish and interpret middle ear conditions if they intend to assume the responsibility, or concede their limitations, and cooperate with the aurist, to depict a more rational plan of treatment.

The paramount significance in distinguishing between a surgical ear, and one which does not incur operative interference, is the ability to make an accurate diagnosis, from which is born intelligent treatment and competent prognosis.

From the standpoint of practical otology, we will consider acute middle ear inflammation under two clinical heads, namely acute catarrhal otitis media and acute suppurative otitis media.

The primary incident in the development of the catarrh is to be found in the nasopharynx. Due to the influence of an acute, or chronic inflammation of the mucosa of the nasopharynx, there results a loss of patency of the Eustachian tube, and a subsequent interference with the aeration of the tympanic cavity. This insufficient aeration in the middle ear results in a decrease in the intratympanic pressure, so that it becomes less than normal. Consequently the drum is at first drawn toward the middle ear by the negative pressure, its capilliaries dilate and there is presented a red, retracted drumhead. There now occurs a transudation of serum from the blood vessels and lymph spaces of the tympanum in order to compensate for the existing negative pressure. The drum rapidly returns to its normal position, the engorgement disappears and there now can be seen a pale, translucent, drum through which one very often sees a shifting line of fluid. This transudate is sterile. It is never found in excess of the capacity of the tympanic cavity, and consequently it is never the cause of a bulging drumhead. Moreover, it is further to be distinguished from an exudate in the tympanic cavity, in that it is the result of a mechanical condition, while an exudate is the result of bacterial activity, and is found whenever a patient presents a bulging drumhead.

Contrasting the catarrhal type with the more frequent acute suppurative otitis media, whose lesion has its seat in the tympanic cavity, and is the result of bacterial activity, producing the reactionary phenomena typical of abscess formation. The lining mucous membrane becomes swollen and infiltrated. The exudate, formed as the result of the inflammation, is thrown into the tympanic cavity and is produced, in excess of the capacity of this space to hold it. As all of the walls of the tympanum are rigid with the exception of the outer one which is formed by the membrana tympani, the latter yields to the pressure and bulges outward. This bulging of the drum is always seen at the beginning of the attack and continues to exist until relieved either by spontaneous rupture of the drumhead, or an incision through it.

The prodromal symptoms common to both: fullness, tinnitus, and deafness, associated with pain and fever are a matter of subjective variations, depending on the virulency of the infection, and the age of the individual. Fever is a very unreliable symptom. If it ranges much above normal, or if it be distinctly remittent and subject to exacerabations, the attendant, of course will regard it according to its value in arriving at a diagnosis.

Ordinarily, fever occurs much oftener in children than in adults, and is usually higher. Pain, in the catarrhal inflammation, is not as severe as in the suppurative type and is expressed by the infant in restlessness, tossing, crying, and pulling at the ears. In children, and adults, the severity of pain depends on the amount of pressure, and the temperament of the patient.

Diagnosis primarily depends on an otoscopic examination facilitated by a clean canal, and adequate illumination. Children and adults are favored by a large meatus. In the infant this procedure at times is very difficult, on account of the infantile duct consisting only of a membranous part which narrows as it approaches the tympanic membrane. The drum inclines out-

ward so that the posterior superior part is closer to the eye. Its color is faintly pink, more exaggerated on crying.

The appearance of the drum membrane in the catarrhal type varies with the stage of the disease. At the onset, the drum is reddish and retracted, the light reflex is distorted or absent. The malleus handle inclines toward the promontory appearing foreshortened. The processus brevis, with anterior and posterior folds, are prominent The transudate may be observed and its level definable. The exudate is commensurate with the amount of negative pressure and as it increases it does not produce a bulging drum—therefore contra-indicating myringotomy. An incision in these cases provides an inlet for infection and so changes a mild disease into a potentially dangerous one.

The otoscopic picture of the drum in suppurative otitis will vary, according to whether a perforation has occurred or not. Before perforation, the first changes to be noted in the membrane are injection of the handle of the malleus and a slight hyperemia to the drum at its upper pole. As the condition progresses the membrane loses its polish. The hyperemia becoming generalized, and the drum bulges obscuring the land marks. After rupture of the membrane the meatus is filled with pus, which when removed reveals a pulsating spot of light, visualizing the exuding pus through the small perforation. Relief of pain and decline of temperature usually follows.

In the treatment of these cases it has been repeatedly emphasized, that the prompt surgical measures are the most effective ones that can be employed, and that an early incision in the drum, is an essential requisite, for the prevention of the further spread of the inflammatory process.

By this means an exit for any possible exudate is provided, and the patient is given the best chance to escape needless pain, chronic suppuration, mastoiditis, and other more serious consequences. It has also been emphasized that to wait for a spontaneous perforation is inexcusable, that the opening so made is seldom sufficient to give adequate drainage, and that such perforation usually occurs too late to prevent serious complications.

An incision properly performed is practically without risk and, if the inflammatory process is not severe, the drum membrane has a tendency to heal rapidly. With an early incision therefore, there is much to gain, and little to lose.

In conclusion, then, it cannot be over estimated that the indiscriminate practice, of opening drums, by those not conversant with the underlying pathology, is to be condemned. That it is necessary to distinguish the principal phases of otitis media, namely the acute catarrhal and the acute suppurative, and depending upon an accurate differentiation of these depends the treatment. The catarrhal type contra-indicates myringotomy; the suppurating type demands immediate incision.

DISCUSSION.

Dr. J. J. Irwin (New Orleans): Dr. Brown has covered this subject so thoroughly that there is little for me to add to what he has said, with the exception of stressing a few points.

Myringotomy is done for the purpose of relieving tension in the middle ear that is caused by serum or pus and not as a prophylactic measure, as some claim it should be done. When I speak of the middle ear I speak of that part of the ear back of the drum, the tympanic cavity proper, not the Eustachian tube or the drum membrane.

Myringotomy should be done early when indicated, and is best done under a general anesthetic. I personally like to use gas. Some use ethyl chlorid. Ethyl chlorid may be a very good anesthetic in the hands of a very competent anesthetist, but for anyone to employ the use of ethyl chlorid without having had much experience with it may have some grief.

In regard to myringotomy, the after treatment is of very great importance. When I say the after treatment I mean the way the ear is taken care of, not only the ear itself but we must consider that we have to look after the nose, the naso pharynx, as well as taking care of the ear.

Some men like to irrigate the ear immediately after a drum has been opened with a warm boracic acid solution or saline solution or any other solution you may choose to use. I personally be-

lieve where there is a thin serous discharge, a little serum and a little blood without any thick pus, it is best not to wash that type of ear but dry it with cotton. Where it becomes the suppurative type with profuse discharge, it is better to wash the ear and it should be washed often, say every three or four hours.

In regard to who should open ear drums and who should not open ear drums, it is a mighty hard statement to make to say that one man should open and another should not. Because a man is not an ear, nose and throat specialist is no reason why he should not open a drum if he is trained to do so. Of course a lot of men are not trained in that special branch of surgery, as it requires a certain amount of skill to be able to open an ear drum.

The first essential thing is the proper use of the head mirror and a good light.

Concerning the type of knife to use, some of us use a cutting knife and others use a knife that you plunge through the drum and make a sort of V-shaped incision, which is a very good procedure I think. I think this type of knife is especially good in the hands of someone not doing this work daily and who has not had the opportunity to keep his hand in.

When opening an ear drum it is best to start in the posterior-inferior quadrant, make a curvilinear incision and make it wide. This as a rule seems to help the condition to clear up much faster. Then, again, drums that are punctured seem to do as well as those in which you have made the large incision. Of course it depends on the individual case and the type of infection we are dealing with.

Dr. Homer Dupuy (New Orleans): Myringotomy does more than drain the middle ear. It helps drain the mastoid antrum, that large cell which is anatomically related to the middle ear. By contiguity of parts this antrum is always involved in every acute suppurative infection of the ear. Timely myringotomy may abort mastoiditis. Then what are the indications for this operation Severe earache, fever, pain on pressure over mastoid antrum, with these symptoms lasting over twelve hours, myringotomy is unquestionably indicated. The obstructive Eustachian tube type, slight earache, diminished hearing, calls for nose, throat treatments with air introduction through Eustachian tube. Myringotomy here would be indiscriminate practice. There seems some wisdom in the advice: better a myringotomy too early than too late.

Dr. S. M. Blackshear (New Orleans): There is no doubt that drums are unnecessarily opened at times, and also there are times when the drums should be opened when they are not. I have not infrequently seen tympanic membranes with considerable bulging of the upper part, known as Schrapnel's membrane, and the lower part gray, caused by occulsion of the Eustachian tube. In this condition, the patient will hear a watch at a short distance from his ear, whereas, if an abscess is present, he will not be able to hear the watch on that side. On the other hand, I have seen cases, especially in young children, with perfectly gray drums and apparently no bulging in which suppuration is present. However, in these cases severe otalgia, and oftentimes high temperature, are to be found, and unless tympanotomy is done, severe complications may result. I have also noted a characteristic cry in cases of otitis media, where the child is too young to tell where his pain is. It is a kind of sign language that I have often noted in such cases. Attention to the nose and naso-pharynx (astringent sprays and applications of the silver solutions to the naso-pharynx) is sufficient to clear up the condition, which is due to Eustachian salpingitis. Inflation of the middle ear should be done with great care, or not at all in these acute ear afflictions.

Dr. M. P. Boebinger (New Orleans): Some years ago, I published a paper and tried to bring out the use of nasal irrigations with the very young in the recumbent position with the head extended at an angle of about forty-five. My reason for reading that paper was because I thought in many instances we could abort middle ear infections.

Invariably the history reads about like this: Acute coryza, an adenitis, a tonsilitis, or as the mother usually calls it merely a cold in the head. If you see the patient early enough and irrigate with a normal saline rather warm you will abort middle ear infection in many instances, more especially if you will wait about an hour, put the patient back in the same position and then use silver nitrate solution, not over one-quarter of one per cent. Follow that up by postnasal applications of silver nitrate 10 per cent to 25 per cent.

I want to stop here, gentlemen, and condemn the use of the iodized phenol. I think it is worthless.

I believe a considerable amount of skill is necessary in the myringotomy. One should be at least skilled in the use of the knife. He must have a fair knowledge of his anatomy. Recently I did a myringotomy on a patient and my first experience got me up about two o'clock in the morning. The mother telephoned me that the baby's ear was bleeding profusely. I couldn't conceive for the life of me what happened. Going back to my anatomy, however, I believe I can safely answer the question. In many cases you will find a large jugular bulb extending up in the floor of the middle ear. In other cases there is a possibility of a dehiscence or anatomi-

cal abnormality. Through inexperience or the rough handling of the knife, more especially when you are using local anesthesia, you may drive the blade of the knife too deeply, and as you know you have quite a plexus on the posterior wall of the middle ear, venous and arterial.

I have made it a rule to make multiple incisions even though my bulging tells me to incise there. We should make otoscopic examination. We should not guess. To guess is dangerous. If necessary to open a drum, all things being equal when you are in doubt, open. If a drum is opened under aseptic conditions and precaution is taken there is very little harm that comes from it, but I believe it is dangerous to wait.

I repeat, gentlemen, before closing, in order to avoid complications, as Dr. Dupuy brought out, when in doubt open the drum.

Dr. Joseph P. Brown (Monroe, La.): There seems to be some misunderstanding as to the definition of indiscriminate myringotomy. The way I interpreted it for this paper was that drums are being opened promiscuously by men who are not skilled in this particular field. They don't know what they are doing. As Dr. Boebinger stated, they get a drum and don't have anything but a knife and a flashlight. They pull the ear back and make a stab with no regard to the anatomy or contents of the internal ear.

As to Dr. Dupuy's remarks, indications for myringotomy were brought out in describing the pathology. Myringotomy is a simple procedure but it is often performed carelessly and without regard to the possible end result.

On the main remarks, I believe we are in accord. I wish to thank the men for their liberal discussion.

LIFE AND DEATH IN THE MEDICAL PROFESSION—The average doctor's life is hard. Physically, because of constant demands and exposure to every conceivable condition, it is probably the most trying professional pursuit. Intellectually, it is most exacting, because of its constant demands upon the mental faculties, due to the rapid progress in medical science, while, emotionally, it is harassing in the extreme, because of its pressure upon the sympathies and the conscience. Constantly confronted with questions of life, death and suffering, the doctor carries burdens often far beyond his strength. Socially, he knows little of freedom and leisure for human intercourse, because of the constant interruptions due to the doctor's calling, a servant ministering to the frailities of mankind. Economically, he is only too often heavily pressed by financial cares, since the average net yield of the doctor's calling is far from what it is often supposed to be.

According to a report by Dr. R. G. Leland, of the American Medical Association, the average gross income of 6328 physicians in 1928 was $9764, ranging from $5289, during the first five years of practice, to a maximum of $11,731, during the years from the fifteenth to the nineteenth of practise, after which the gross income declined to $4609, for fifty years of practise or more. These are gross incomes and therefore subject often to very substantial reductions before the net incomes are determined. But it is safe to assume that after taking all the facts into consideration the average net income of practising physicians throughout the country ranges between $5000 and $6000 per annum. The income is apparently at its best in surgery, Roentgenology and orthopedics. It is least in public health, tuberculosis, teaching and physical therapy. The doctor, in response to public opinion, is required to maintain a relatively high standard of life. Whether he wishes it or not, he must often live beyond his means to sustain the honor and the dignity of the profession. He must belong to several medical societies, social clubs, etc., must keep a car and attend conventions, all of which are additional burdens not common to many other professions. Hence, the stress and strain of the doctor's life unquestionably bear heavily upon his average duration of life and his powers of disease-resistance in chronic affections of adult life.

A physician engaged in the healing art, with his thoughts concentrated upon his patients, has little time for himself or for the application of his knowledge to his own needs. Medical literature, unfortunately, is almost barren of useful discussions on the health problems and diseases of physicians, urgent as the necessity must appear to those who have given extended thought to the question. It is true that the *Journal of the American Medical Association* publishes annually a brief analysis of the causes of death in the medical profession, but this discussion is of small practical value and only of limited interest, in view of the unfortunate manner in which the data are presented. They are comparable from year to year with great difficulty and leave much to be desired in matters of detail. They start with a grievous statistical error, in that they are not a tabulation of deaths but rather a tabulation of causes of death, multiple causes being separately considered instead of being classified in accordance with international usage dealing with joint causes. How this works out in actual practise is not clearly deducible from the figures as published.—Frederick L. Hoffman, M. D.

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THE HISTORY OF DIPHTHERIA

Diphtheria has been known since ancient times. It is obvious that a disease with definite visible lesions would early obtain nosographic significance. Diphtheria was recognized undoubtedly at the time of Hippocrates, who, after all, represents more an individual who assembled facts about disease already known rather than a keen investigator. The most definite information about diphtheria dates from the time of Aretaeus, who flourished in the second century. In describing ulceration about the tonsils as well as ulcers appearing on the tonsils, the description of these ulcers, with their subsequent development, is that of untreated diphtheria. Aretaeus also described the paralysis of the palate which occurs as an occasional complication of the disease. Aetius of Amida, who lived in the sixth century, left a splendid compilation spoken of as the *Tetrabiblos*. In this work he described epidemic diphtheria, much as did Aretaeus. From these ancient times up until a century and a half ago, the principal references of importance to diphtheria are concerned with various epidemics which occurred at varying intervals. The epidemics in the Ibernian Peninsula, occurring continuously from 1583 to 1618, again in 1630 and 1645 and 1666, are especially noteworthy on account of the excellent clinical descriptions of the disease by the Spanish physicians of that epoch. These epidemics spread to Italy and Sicily. Courtesius of Messina (1625) recognized the contagiousness of the disease. In 1747 and 1748 Cremona suffered a severe epidemic which was the occasion of the recognition by Ghisi (1749) of the paralytic phenomenon associated with diphtheria. The epidemics of Spain and Italy spread to Britain and France, as well as to the more northern European countries. In America there was a severe epidemic in 1735-36. Up to the beginning of the nineteenth century, the most outstanding study of the disease in this country was that of Bard, Professor of the Practice of Physics at King's College, who described suffocation angina. He performed autopsies on these patients and reported the infective nature of the disease. Diphtheria at that time was known as croup, and true croup and the croup of diphtheria were not differentiated. It was not until the investigative work of Bretonneau, published between 1821 and 1826, that the word diphtheria began to be employed.

Interest in the disease by the French clinicians and French students of medicine was aroused largely through the influence of Napoleon Bonaparte. The catholicy of the interests of this great Corsican,

who could simultaneously revise civil laws, plan surpassing engineering enterprises, carry on war, introduce currency reforms, suggest agricultural improvements and, in fact, accomplish almost everything, is further evidenced by the fact that it was he who was responsible for this awakened interest in the disease through a prize of 12,000 francs offered for the best work on the subject of croup. This came about as the result of the death from this disease of the eldest son of Louis Bonaparte. Bretonneau, in his *Traite de la diphtherite*, produced a medical classic which ranks among the greatest of all time. His work came out in four different memoirs and is a magnificent example of thorough clinical investigation. To him belongs the credit of definitely showing that diphtheria is a specific disease. In 1855 he published a final memoir, *Sur les moyens de prevenir le developpement et le progres de la diphtherie*. It should be noted that this is the first time the word diphtheria was printed as such.

Fourteen years later Trendelenburg first successfully transmitted the disease from man to animals. Previous to this time several attempts had been made to transmit it from man to man. In 1883, Klebs described the "micrococci of diphtheritis," but it remained for Loeffler, in 1884, to isolate and describe fully *Bacillus diphtheriae*, in a publication which is spoken of as one of the classics of bacteriologic science.

The next great contribution to the knowledge of the disease eminated from France. Roux and Yersin (1888) discovered that the organism excreted an exotoxin which is capable of producing in animals when injected, symptoms identical with those of diphtheria. Roux and Yersin also laid great stress upon the methods of diagnosing the disease by smear and culture. They founded the doctrine of the carrier state of diphtheria. The researches of Roux and Yersin are fundamental and upon them are based many of the present-day concepts of infection. Within a year or two after this epochal contribution, E. Behring (1890) reported upon the discovery of antitoxin. To this great German should go all honor for the introduction of protective sera into medicine. To him also goes the credit for suggesting the prophylactic use of diphtheria antitoxin to produce temporary passive immunity. Antitoxin was first prepared on a large scale in Germany in 1892 and within the next three years it was being made in large amounts in practically all civilized countries.

In the next ten or fifteen years extensive investigative work was carried on by laboratories throughout the world. Attention was directed not only to the immunology and serology of the disease, but also to the pathology. Extensive pathologic studies were published in this country and Europe chiefly by the pupils of Virchow.

Less than twenty years ago Bela Schick described the allergic reaction in an individual sensitive to diphtheria antitoxin. Two years later he demonstrated the fact that intradermal injections of diphtheria antitoxin did not produce a skin reaction if in the circulating blood of individuals there was sufficient antitoxin to neutralize the toxin. In 1907 Theobald Smith suggested the employment of toxin-antitoxin mixtures in order to produce active immunization against diphtheria. It was not until 1913 that von Behring applied in practice this method of preventing the disease, a method which has been extensively used throughout the United States, popularized largely by the efforts of Park (1913) and his collaborator, Zingher.

HOSPITAL STAFF TRANSACTIONS

HOSPITAL STAFF TRANSACTIONS.
HOTEL DIEU.

The monthly meeting of Hotel Dieu Staff was held June 20, 1932, at 8 P. M.

The scientific program comprised:

1. A case report by Dr. Joseph Maldonado, "Rupture of the Heart; Autopsy." The patient, a male aged 74, inmate of the old people's ward, complained of weakness and a dull ache over the heart region, extending to the right mid-clavicular line. Examination showed the heart increased in size more to the left than the right but not downward, apex impulse not visible nor palpable, rate very slow, rhythm regular, tones distant and weak, no murmurs. Patient was ordered to bed and diagnosis of heart failure secondary to chronic thrombosis made; he seemed to feel better in the afternoon, but the following morning he expired in the bathroom, having gone there without aid or permission.

Autopsy showed about 300 c.c. blood (both fluid and clotted) under pressure in the pericardial cavity. There was a tear about ½ cm. long in the visceral pericardium over the apex of the heart on the left side; through this tear a blood clot, about 5½ cm. in length, had ruptured from the cavity of the ventricle right through the muscle, the rent in the muscle being higher than that through the pericardium. The heart was removed completely for further study.

Dr. Maurice J. Couret showed, on the screen, pictures of the actual heart—gross and microscopic; he explained the conditions responsible for the rupture.

Dr. S. C. Jamison: Rupture of the heart may occur from several different causes; the commonest is a result of general crushing injuries where there is also injury to other organs; then these other injuries take the center of the stage and the heart injury is overlooked.

Rupture, when it occurs, is usually in the auricles, for that is the thinnest portion. Spontaneous rupture merely from disease occurs as a result of coronary occlusion which causes necrosis of the wall and a rupture weeks or months afterward. In dealing with the common condition of coronary occlusion, we should remember to guard the prognosis, because of the possibility of sudden death months later. Rupture of the heart as a result of aneurysm is possible. Whenever a heart is as weakened as this one was by degenerative process, and there is a superimposed metabolic abscess (as I presume this must have been), such a heart is very likely to rupture.

When blood clots in the pericardium, the heart ceases merely as the result of pressure, so we can of course do nothing at all. We must differentiate, in traumatic injuries, between the cases which occur with injury to the heart and those without efflux of blood from the pericardial cavity but in which the visceral pericardium is so injured that the blood can get into it but not outside. Unless we expect such a condition, ante-mortem diagnosis is impossible. Rupture of the heart cannot be recognized clinically. Besides rupture of the walls, either ventricles or auricles, it is not rare to see rupture of the valves, particularly the aortic. Rupture of the mitral valves is not unknown. I have seen only one rupture secondary to aneurysm.

II. Report covering six cases of "Primary Abscess of the Epiglottis" seen within fifteen years, by Dr. Val H. Fuchs:

Primary abscess of the epiglottis, while comparatively rare should be kept in mind when patients complain of a sticking sensation in the throat, accompanied by some dysphagia, hoarseness, and temperature. The six cases all showed purulent inflammation of the epiglottis itself on its anterior surface.

Etiologically, this condition results from exposure, from excessive use of alcohol or tobacco, or from trauma caused by foregn bodies—fish bones particularly, which may give rise to an abscess at the point of entrance into the glottic-epiglottic fold.

Treatment consists of cold applications and an astringent spray in the throat; but once the pus becomes localized, incision and drainage is imperative. One of the six cases had severe throat pains and dysphagia for twenty-four hours. A large, bulbous swelling on the anterior surface of the epiglottis was incised and drained, giving complete relief within three days. Another case had two distinct swellings, one on each side of the midline of the anterior surface, which ruptured en route to the hospital; suction to the mouth of swellings, and cold applications to neck were the only treatment necessary.

It is rare to see a primary infection of the cartilage, e.g. in the larynx. These abscesses take place in the loose areolar tissue; on one side the mucous membrane is closely attached and shows only a little edema; the loose area in front of the cartilage is infected, not the cartilage itself. If it were the cartilage, amputation of the epiglottis would almost surely be necessary.

One of the cases presented a small fish bone which was removed, and pus flowed freely from the swollen epiglottis. In another, using a Jackson laryngoscope, I elevated the tongue without elevating the epiglottis. The most important thing is to place the scope over the tongue, keeping the epiglottis out of the way so that the abscess can

be seen. Incision is made with a long curved knife.

Dr. Homer Dupuy: Dr. Fuchs' large experience is extraordinary. The cases I have seen were of highly infectious origin, with ulceration and abscess formation.

Cartilage, as a rule, does not readily give in to infection; but when it does, the surgeon is up against a tremendous proposition. In abscess of the epiglottis, one is very fortunate if he can avoid a tracheotomy. But increasing dyspnea calls for tracheotomy.

III. Dr. Joseph A. Danna spoke on "Some Principles Involved in the Pathology and Treatment of Cancer."

Dr. Maurice J. Couret exhibited slides and microscopic drawings of cancer cells. In one case, after surgical diathermy removal of a section of the tongue for a benign growth suspected to be carcinoma, a lymph gland removed from the neck a few minutes later showed lymph spaces filled with tissue detritus, without any inflammatory evidences whatever. In answer to Dr. E. H. Walet's question, "How can we know positively that the detritus in glands of the neck had not existed previous to the application of diathermy to the tongue?" Dr. Couret replied that in this case the lymph nodes showed no inflammation—only cell detritus in the lymph spaces.

Dr. H. E. Bernadas: Dr. Danna infers that normal epithelial cells, having once broken forth from their normal habitat, become the source of carcinoma. I do not think this true of normal epithelial cells in normal individuals. I believe it is true where there is a hereditary type of epithelial cells or active tissue. The heridity tendency is recessive, of course, but it is manifest.

Dr. P. B. Salatich: For carcinoma of the breast, I believe better results are obtained by beginning above, dissecting the fat and glands away from the axillary space and removing the breast as a whole. For carcinoma of the cervix, I have had better results with needles than with capsules.

Dr. F. Chalaron: Our results with pure radium for cancer of the prostate and of the bladder have been disastrous because of the inability to control radiation and the danger to nearby structures. On the other hand, when radon needles were place around the growths, metastasis had not occurred after four years in one case, and five years in another.

STAFF MEETING OF THE MISSISSIPPI BAPTIST HOSPITAL

The regular monthly assembly of the staff members of the Mississippi Baptist Hospital was held at 6:30 o'clock on September 6 in the dining room of the hospital where dinner was served. At the termination of the dinner the visitors were introduced. They were Drs. Welch and Bauw of the State Insane Hospital and Drs. Henry, Verner and Shannon of Jackson.

The superintendent then made a very interesting talk in which he asked the co-operation of all staff members in aiding the hospital in the collection of its fees by emphasizing to the patients before they are admitted that the hospital fee will have to be collected at dismissal, and letting them know about what they may expect to pay for the services rendered. Constant repairs are going on all of the time and at the present consist of the repair of the diet kitchen on the second floor. The hospital is trying to render the best service obtainable at all times and as reasonably as possible.

The minutes were read and adopted as read.

It was brought to the attention of the staff that it is time for the training school to open and for classes to be taught. Some of the men have been teaching for a long time and are stepping back urging that some of the younger men take on these duties now.

Dr. Robin Harris opened the program with a presentation of a case:

"On July 11, an 18-year-old boy presented himself to me for an examination. He gave a history of having had a chronic discharging left ear at intervals for 8 years or more. During the summer he had been swimming at regular intervals and two weeks prior to this examination his ear began to pain him more than usual during an acute attack.

"There was swelling and redness behind the ear and after cleaning the canal of a thick foul smelling discharge there was noted much swelling in the drum area and the surrounding canal. Roentgenogram showed a marked cellular formation. All cells in the left mastoid were filled with some breaking down apparently acute. At operation the mastoid was found filled with pus. At operation the cellular tissue was found soft, indicating considerable bone necrosis. The mastoid antrum was stuffed with a cholesteatoma. Of course, the treatment for cholesteatoma is radical mastoidectomy but in the face of acute infection, I elected to do a simple operation but stopped long enough to explain to the parents the gravity of the situation. They being very intelligent people readily agreed to radical mastoid operation at a later date. This lad had been in severe pain for 10 days. He had a rising in his head that so many people in country and town pay no attention to, accept it as a matter of course and do not have the condition treated. Now if this acute inflammation had not gone to mastoiditis, acute, the diagnosis of cholesteatoma would not have been made until possibly brain abscess or other intracranial compli-

cations. He obtained immediate relief from pain and felt as well as ever from the time he was out of ether. The point is most people and a great many doctors allow a chronic discharging ear to go on to sadness. I believe with constant watching 90 per cent of discharging ears are curable."

Dr. Lawrence Long then reported a review of the success that had been met with the use of atebrin by the United Fruit Company in which they reported the use of the same in some 320 cases; also, the fact that the annual report of this company is usually one of the outstanding pieces of medical literature of the year, especially with reference to tropical diseases.

Dr. Harvey Garrison, Jr., reported two interesting cases:

1. An infant that had lived fifteen hours and who had been very cyanotic since birth especially in the lower extremities.

There was a dullness in the back and bases of both lungs and though carbon dioxide and oxygen were given the child expired at the end of fifteen hours. A diagnosis had been made of prematurity since this baby was only an eight months' child, atelectasis and a possible injury to the lower extremities since they had remained so blue during the time the child lived.

At autopsy almost complete atelectasis was found and a patent ductus arteriosus but with a much larger duct than normally found even when they do persist.

This case was discussed by Dr. Wilson.

2. A three-day old infant was vomiting continuously since birth and seemed to persist in keeping a sort of mucus in its mouth. The vomiting was not projectile at all but everything that was taken seemed to roll out of the mouth about fifteen minutes after it was taken. Barium was given and what remained in the stomach did not pass the pylorus after 48 hours. A large soft mass was felt next to the liver on the right in the upper abdomen. Atropine was given to the point of saturation with no results. It was felt that since no relief had been obtained it was best to explore this child and see if there could not be relief given it. With local anaesthesia the abdomen was opened and there was found a somewhat thickened mucoid material in the peritoneal cavity. Also the transverse colon was bound to the duodenum by adhesions which were making a rather large mass which had been felt previously. This was freed easily by cutting these adhesions with scissors and the colon immediately dropped to normal position. The child improved very rapidly and normally.

This case was discussed by Dr. Hagaman and Dr. Garrison, Sr.

Some of the interesting cases that had expired during the previous month were discussed briefly.

Dr. Underwood gave an interesting account of the trip on the Know Mississippi Better train to Mexico City.

L. W. Long, M. D.

STAFF MEETING OF THE KING'S DAUGHTERS' HOSPITAL, GREENVILLE, MISSISSIPPI

Abstract—Eclampsia—Dr. J. B. Hirsch.

The convulsions of eclampsia are caused by an edema of the brain and should be treated along the same lines as any similar condition causing an edema of the brain with its nervous manifestations. Hypotonic fluid causes an increase in intracranial pressure whereas hypertonic solutions decrease it.

Renal elimination is the largest factor in the control of eclamptics. When the kidneys improve the eclamptic dangers increase. It is a grave mistake to minimize the kidney lesions. The cause of kidney lesions of eclampsias has never been agreed upon. The treatment, no matter what the stage, is practically the same: first, hospitalization; second, withhold fluids; third, diet should be more solid with low salt avoiding too much sweets. There should be moderate purgation with magnesium sulphate, intravenous glucose in concentrated form four or six hours apart, not overlooking magnesium sulphate in the vein, as well as amytal. As a last measure spinal puncture and venesection.

STAFF MEETING OF THE VICKSBURG SANITARIUM

The regular monthly meeting of the staff of the Vicksburg Sanitarium was held on Saturday, September 10, at 6:30 p. m. After transaction of business of the staff and consideration of the reports from the records department and analysis of the work of the hospital, the following special case reports were presented:

1. Acute Intestinal Obstruction, Postopertive.—Dr. A. Street.
2. Anemia.—Dr. L. J. Clark.
3. Anemia in an Infant.—Dr. G. C. Jarratt.
4. Ovarian Cyst with Twisted Pedicle in a Child.—Dr. R. A. Street, Jr.

Dr. L. S. Lippincott discussed the Clinical Application of Blood Chemical Analyses.

Three-minute reports of the literature of the month were made by Drs. J. A. K. Birchett, Jr., A. Street, Lippincott, and R. A. Street, Jr.

The meeting closed with a lunch. The next meeting of the staff will be held on Monday, October 10, at 6:30 p. m.

Leon S. Lippincott, Secretary.

VICKSBURG SANITARIUM—STAFF MEETING, SATURDAY, SEPTEMBER 10, 1932

Abstract.—Acute Intestinal Obstruction, Post-operative.—Dr. A. Street.

Patient.—A white female, single, aged 33 years, first observed on August 10, 1932. Chief Complaint—Severe pain in right lower abdominal quadrant, duration 48 hours; no vomiting; bowels well open. The last menstrual flow was one week ago. Has always had dysmenorrhoea. There had been occasional attacks of low abdominal pain and soreness, frequently unrelated in time to the menstrual flow. General health during the last twelve months had been rather poor. Appetite poor and had lost fifteen pounds in weight in the last year. Had been nervous. Had been treated for sinus trouble. History sugested a tendency to hysteria. Patient had a sister who had a marked psychoneurosis and hysteria and who was operated upon twice for acute post-operative intestinal obstruction. Physical Examination—Well developed, poorly nourished, temperature 98.6°F, pulse 76. Blood pressure 140/100. Important findings were as follows: The duodenum was flat; no rigidity; moderate low abdominal tenderness, more marked on the right. Rectal examination showed fundus well forward, normal size and contour and movable. There was a firm mass behind the uterus about three inches in diameter which was movable and very tender. The impression obtained from the history and physical examination was that the pelvis contained a growth, probably a cyst of an ovary, and probably with a twisted pedicle. Blood—Leukocytes, 6,200; small lymphocytes, 42; large lymphocytes, 5; polymorph neutrophiles, 50; polymorph eosinophiles 3. Urine—Not abnormal.

Under daily observation the pain and tenderness became worse.

Operation—On August 12; low median incision. The right ovary was a firm mass, 2½ inches in diameter and irregularly rounded. It was intimately adherent to the base of the right broad ligament, from which it was separated with difficulty, and then removed, along with the right tube. The raw surface was carefully peritonealized. The left ovary was about two-thirds as large as the right and also cystic, irregular in shape and of increased density, and was abnormally fixed to the broad ligament. This picture was suggestive of ovarian endometriosis and removal of the left ovary was considered. In view of the age of the patient (33 years) the ovary was not removed. The appendix showed evidence of chronic inflammation and was removed. Tissue examination by Dr. Lippincott showed endometriosis of the right broad ligament and surface of the right ovary; oophoritis, acute and chronic; salpingitis, chronic, right; cystoma of right ovary; appendicitis, chronic. The patient began to menstruate about the fifth day after operation. On August 21, nine days after operation, the patient suffered pain, nausea and vomiting. On August 22, there was hiccough, moderate abdominal distension, increasingly rapid pulse and weakness. Roentgenogram of the abdomen in the erect posture showed multiple fluid levels in the intestines. The patient received 1,000 cc. of 5 per cent glucose in 1 per cent saline solution intravenously on the 22nd, and 2,000 c.c. of the same solution on the 23rd.

On August 23, the abdomen was reopened through the original incision which was well healed and clean. The ileum was completely obstructed by a peritoneal band drawn tightly across it and fixing it to the broad ligament stump close to the right infundibulo-pelvic ligament. It was densely adherent in this position.

The intestine showed no gangrene and after liberating it, the wound was closed without drainage. Convalescence was uneventful, after a few days of maintaining body fluids and nourishment by saline and glucose intravenously, 3,000 c.c. of 5 per cent glucose in 1 per cent salt solution each 24 hours.

Remarks.—In reviewing this case, the possibility comes to mind that the endometriosis of the right broad ligament with the advent of the menstrual period on the fifth post-operative day may have been a factor in causing the obstruction. It seems possible that this may have been brought about by endometriotic tissue in the stump taking part in the menstrual process and causing the inflammatory reaction and adhesive process with resulting obstruction. Since we now have a positive diagnosis of endometriosis, it would seem that the removal of the left ovary as well as the right would have been desirable.

VICKSBURG SANITARIUM, STAFF MEETING, SATURDAY, SEPTEMBER 10, 1932

Abstract.—Anemia in an Infant.—Dr. G. C. Jarratt.

Patient—White male, aged seven months, admitted to hospital July 31, 1932. Chief Complaint—Fever, paleness. Present Illness—Mother stated that infant began to run high fever previous morning and had continued since. Fever was 102° F. this morning. Infant had been very fretful, restless, and refused bottle for past two or three days. No cold or cough since onset of fever. Stools had been hard and yellow; scant urine output for previous two days. Past History—Mother stated that when infant was three days old began to bleed from nose, gums, and buccal membrane; also passed large black clot of blood from bowels. Urine was not red indicating hemorrhage from the genito-urinary tract. There were no petechiae over body; no fever or jaundice with

bleeding. Private physician in attendance gave intramuscular injection of serum to promote clotting of blood; continued to ooze from nose and gums with passage of clots from bowels and serum was repeated on the next day. In 24 hours all bleeding stopped and has never recurred. There never has been any associated jaundice or enlarged glands. Since birth mother has noted a progressive paleness. Birth History—Seven months premature, weighing four pounds; cephalic delivery without forceps; no cyanosis or convulsions. Did not nurse for first few days due to extreme weakness. Feeding History.—Taken off of breast on third day of life due to insufficient milk. Put on Dime brand (condensed) milk, two teaspoonfuls to three ounces of water and this has been given on no regular schedule during the day and night to present time. No orange juice, cod liver oil, cereals or vegetables.

Family History.—One sister aged 19 months had infantile eczema; no jaundice in any member of the family. No tuberculosis contact. Physical Examination.—Well developed and nourished but very pale and anemic infant acutely ill. The general appearance of the skin was a greenish paleness. Weight 15 pounds. No bossae; conjunctivae very pale; four upper and two lower incisors through; buccal membrane very pale. Slight beading of ribs. Loud systolic murmur over whole of precordium with maximum intent at base, not transmitted; no enlargement. Believed murmur hemic in nature. No enlargemet of spleen or lymph glands. Urine.—Large trace of albumin; trace of acetone. Blood.—Fragility normal. Wassermann test negative. Retraction of clot, 45 minutes. Hemoglobin, 40. Erythrocytes 2,130,000, with anisocytosis, poikilocytosis, polychromatophilia and numerous degenerated red cells. Platelets 144,000. Leukocytes 7,200; small lymphocytes, 59, large lymphocytes 6, monocytes 2, polymorph neutrophiles 33. No malaria found. Infant was admitted to hospital. Much difficulty in finding suitable blood donor. Given 125 cc. of whole citrated blood intravenously with no reaction, on August 1. Child discharged on formula: Cow's milk, 20 ounces; water, 10 ounces; Karo, two tablespoonfuls; 6 ounces to be given at 6, 10, 2, 6 and 10 o'clock. Also given jeculin, two teaspoonfuls three times a day with iron and ammonium citrate. August 3.—Weight 15 lbs.; temperature 98.6° F. Mother stated infant taking formula and seemed to enjoy it. Vomits jeculin when given. No fever since returning home and slept well. Had one to two yellow stools daily. Color greatly improved and smiling and seemed happy. Murmur had disappeared.

Diet.—6 a. m., 6 oz. formula; 8 a. m., orange juice, 1 ounce; 10 a. m., cereal and 6 oz. formula; 2 p. m., vegetable puree with yolk of egg, butter, and on alternate days strained vegetable soup, 6 oz. formula. 6 p. m., prune or apricot puree and 6 oz. formula; 10 p. m., 6 oz. formula. Prescribed iron and ammonium citrate and sun baths, front and back, up to 15 minutes twice daily. August 7.—Weight 15¼ lbs. Taking formula, fruit, cereal, vegetables and soup well. Excellent color, smiling, spleen and liver not palpated, no glands enlarged. Continued diet and iron. Prescribed cod liver oil one teaspoonful twice daily. September 5.—Weight 18¼ lbs. Mother stated infant takes all of food and seems like a different child. Giving sun baths and cod liver oil but had stopped iron on August 10. Color improved. Beginning tan of body. Blood.—Hemoglobin 45; erythrocytes 3,250,000; platelets 152,000; leukocytes 9,600; small lymphocytes 53; large lymphocytes 6; monocytes 20; polymorph neutrophiles; 17 polymorph eosinophiles 4. Other vegetables added to 2 p. m. feeding, also dessert as jello, custard and baked apple. Formula: Cow's milk 23 ounces; water 7 oz.; Karo two tablespoonfuls; 6 oz. at 6, 10, 2, 6 and 10 o'clock. Continued iron. Summary.—The cause of anemia in this case is attributed to several factors. The first of these is prematurity. We know that premature infants under ideal feeding conditions are prone to anemia and especially if prophylaxis is not instituted early as was not done in this case. Secondly, from the history the infant evidently suffered from melaena neonatorum, losing considerable blood for the first few days of life. Lastly, improper feeding as evident from the feeding history and also the fact of prompt and rapid recovery from small transfusion and proper diet.

Abstract.—Ovarian Cyst with Twisted Pedicle in a Child.—Dr. R. A. Street, Jr.

Patient.—Colored female, aged 10 years, admitted to hospital August 17, 1932. Chief Complaint.—Continuous lower abdominal pain for past two days associated with nausea and vomiting. Present Illness.—Onset with rather acute, sharp, well localized pain in the left lower quadrant two days ago, followed by a swelling in the lower abdomen much nausea and continuous vomiting which was never flocculent or bile colored. Pain continued all day and was not relieved by medication; slight relief obtained by lying on left side. After a restless, sleepless night patient was referred to hospital. No bowel movements for past two days only small amount of flatus obtained by enema. Past History.—Negative except that for the past year there has been occasional sharp, localized pain in the left lower quadrant, of short duration, never as severe as in present illness, and relieved by rubbing and lying down. Physical Examination.—Acutely ill; temperature 100.4°F.; pulse 90; respiration 18; blood pressure 110/72. Tongue slightly coated; lips dry and crusted. Vis-

ible swelling in lower abdomen with upper level about at the umbilicus; acutely tender; a cystic-like mass, dull note to percussion feels round, difficult to outline because of acute tenderness; not freely movable. Blood.—Leukocytes 14,800; lymphocytes 22, monocytes 2, polymorph neutrophiles 76. Urine.—Not remarkable. Wassermann, Kahn, and Kline and Young tests negative.

Impression at this time—condition probably intestinal obstruction in lower bowel. The mass was difficult of explanation. Operation was advised. Intravenous glucose solution was given. Operation.—Under anaesthesia, the mass was found to be freely movable and cystic and the diagnosis of possible ovarian tumor was then considered. This was the finding on opening the abdomen. The cystic mass was gangrenous and the pedicle twisted. Mass including ovary, tube and involved part of uterus removed. Wound closed without drainage. Subsequent.—Excellent postoperative course and rapid recovery. Patient last seen on September 3; at this time the wound was healed and the condition excellent. Pathological Report by Dr. Lippincott.—Appendicitis, chronic; dermoid cyst of ovary, left; oophoritis. acute with interstitial hemorrhage, left; salpingitis, acute and chronic, left; Interstitial hemorrhage and acute inflammatory of broad ligament and horn of uterus. Comment.—The case was interesting in view of the pathological findings in so young a patient.

STAFF MEETING OF THE VICKSBURG HOSPITAL AND CLINIC

The regular meeting of the staff of the Vicksburg Hospital and Clinic was held on August 11, 1932, at the Vicksburg Hospital. A discussion of the cases of mortality occurring during the preceding month was held with free comment by the staff.

Dr. W. E. Akin was given leave of absence for one year.

Dr. Thomas P. Sparks, Jr., formerly of Jackson, was elected to membership on the staff.

Scientific program was presented as follows:

1. General Remarks Concerning Tumors of the Breast, with Report of Cases.—W. H. Parsons, M. D.
2. The Diagnosis of Diseases of the Blood.—W. G. Weston, M. D.
3. Routine business transacted.
4. Lunch was served and the meeting was adjourned.

Abstract.—Some General Remarks Concerning Tumors of the Breast, with Report of Cases.—Dr. W. H. Parsons.

A series of 5,000 patients was reviewed, and it was found that of this number, fifteen had presented themselves because of some disorder of the breast. Of these, fourteen were females, one was a male. Of the fifteen patients, six were found to have malignancy of the breast, one tuberculosis of that organ, one an acute inflammatory condition and the remainder had benign tumors.

The essayist reported also on the frequency with which carcinoma of the uterus and certain other organs had occurred in the series of patients studied, and it was found that during the period of time covered by this review carcinoma of the breast was decidedly less often encountered than malignancy of the uterus or stomach.

The statement from Balfour's clinic that malignancy of the stomach in young people should not be regarded as more serious than in the older was recalled and the attention of the staff was drawn to the fact that in the limited series of cases of carcinoma of the breast under discussion, likewise, relative youth did not seem to unfavorably affect the prognosis.

The questions of diagnosis and treatment were discussed in some detail. The results following radical excision alone and radical excision with radiation or deep x-ray therapy were contrasted as well as technical details such as cautery excision, etc. It was remarked that about one-third of cases of carcinoma of the breast are arrested and possibly cured.

Six cases were reported in detail, outlining especially the age of the patient, the breast affected, the date on which patient was first examined, the date of onset of symptoms, previous treatment, whether there was or was not axillary involvement, the type of operation done, the histologic reports of the growth removed and the end results. It was remarked by the essayist that in these particular cases, sufficient time had not yet elapsed to draw any conclusions relative to the ultimate results.

Abstract.—The Diagnosis of Diseases of the Blood.—Dr. W. G. Weston.

The essayist outlined the more common points in the diagnosis of blood dyscrasias. The discussion was limited to those conditions in which the most marked changes occurred in the blood itself, and scant mention of the alternations found in other tissues was made.

It was remarked that the following findings should immediately suggest the possibility of a blood disease and that exclusion of same ought to be done by appropriate laboratory procedures:

1. The presence of an anemia, the suspicion of which should always be confirmed or ruled out by laboratory procedures.
2. Enlargement of the lymph nodes or the spleen or both. The presence of either indicates complete laboratory study and, if necessary, biopsy.
3. Hemorrhage into the tissues from the mucous membranes.

4. Throat lesions, particularly of the ulcerative or membranous type.

Further elaboration of the findings leading one to suspect a blood disease was made and a brief discussion of the above findings was given.

Some of the causes of anemia were listed and discussed as follows:

1. Primary or pernicious anemia; 2. Secondary anemia; 3. The so-called pernicious anemia of pregnancy; 4. Aplastic anemia, primary or secondary; 5. Anemia associated with other blood diseases, for example leukemias.

The essayist reported a case observed by him elsewhere in which, with a history of repeated and prolonged menorrhagia and metrorrhagia to the point of exsanguination, and, in spite of the vehement denial on the part of the patient of the possibility of pregnancy and incomplete abortion, was treated as an incomplete abortion in a conservative manner for several weeks before the true diagnosis was made. Complete blood study earlier would have made the diagnosis much sooner, and although the final outcome might not have been different, certainly a more correct prognosis could have been made to the family.

The appearance of the throat in agranulocytosis was outlined and case report was given.

A word of caution was offered relative to the removal of enlarged, red and apparently chronically diseased tonsils without complete physical examination and blood study. Particularly should tonsillectomy be done with caution in this type of case, where there is also a cervical adenopathy.

The essayist had observed one case in which the above conditions were present, and in which tonsillectomy was done without undue difficulty. One week later the patient returned with all of the cardinal signs and symptoms of an acute lymphatic leukemia and death occurred within twenty-four hours.

The importance of eliciting an accurate history was again stressed and mention was made of its particular value relative to the occupation of the patient and relative to recent illness or medication.

LOUISIANA STATE MEDICAL SOCIETY NEWS

TUBERCULOSIS.

The Tuberculosis and Public Health Association of Louisiana is giving a series of one-day conferences during October at the following places:

New Orleans	October 8, 1932
Baton Rouge	October 11, 1932
Lafayette	October 13, 1932
Lake Charles	October 15, 1932
Alexandria	October 18, 1932
Monroe	October 20, 1932
Shreveport	October 22, 1932

Mr. Arthur J. Strawson, Field Secretary of the National Tuberculosis Association, will attend all of these conferences and take a leading part in them.

A cordial invitation to be present at these meetings is extended to all interested.

Louisiana State Board of Health.

MEETING AT MARINE HOSPITAL.

A joint meeting of the New Orleans Gastro-Enterological Society and the Medical Staff of the Marine Hospital will be held on October 20 at 8 p. m. in the main building of the Marine Hospital. All members of the Profession are cordially invited.

The following program will be presented:

1. Transposition of the Colon. Report of three cases.
   By: Dr. A. L. Levin.
2. Unusual cases of Bacillary Dysentary.
   By: Dr. D. N. Silverman.
3. Presentation of Cases.
   By: Dr. M. K. King and Dr. A. Mayoral.

Donovan C. Browne, M. D.,
Secretary.

SECOND DISTRICT MEDICAL SOCIETY.

The Second District Medical Society held its monthly meeting at Reserve, September 15, at the home of Dr. James S. Parker.

After a very enjoyable dinner the Society heard an instructive paper on, "Infections of the Hand," by Dr. Emmett L. Irwin of New Orleans. Much interest in this subject was manifested by the number of discussions. The attendance was very good, every Parish comprising this Society was represented by some members.

Dr. Daniel N. Silverman, Councilor of the Second Congressional District, was notified that the next meeting of the Organization will be held on Thursday, October 20, at Kenner, the home of the President, Dr. Jos. S. Kopfler.

HUTCHINSON MEMORIAL CLINIC.

The Hutchinson Memorial Clinic was opened September 19, 1932, in the Hutchinson Memorial Building, Tulane University, 1430 Tulane Avenue. The clinics are not at the present time all being run. Five different departments are represented: Medicine, Surgery, Tropical Medicine, Neurology and Psychiatry, and Preventive Medicine. The clinics are open to all those unable to pay. It is hoped that advantage will be taken of this clinic by doctors who need assistance or who would like more extensive studies than can be made on their indigent patients and that they will refer them for consultation. Reports will be made to the doctors if notes are sent in requesting information, either general or specific.

NEWS ITEMS.

Dr. H. W. E. Walther, head of the department of urology at the Southern Baptist Hospital, New Orleans, has just been honored with the Vice-Presidency of the Section on Urology, of the Fourth Congress of the Pan-American Medical Assn., which will be held in Dallas, Texas, March 21-25, 1933. The Congress includes physicians of South America, Central America and the United States.

Dr. F. E. LeJeune, Dr. N. F. Thiberge, Dr. R. A. Strong, Dr. G. C. Anderson and Dr. J. H. Musser will speak before the Eighth Councillors District Medical Society, in McComb, October 11, 1932.

Dr. Charles A. Bahn, Professor of Ophthalmology in the Medical Department of Louisiana State University, will speak at the tenth annual fall clinical conference of the Kansas City Southwestern Clinical Society the first week of October. Dr. Bahn will hold a clinic on External Diseases of the Eye. He will give a clinical lecture on Eyes and Teeth. Dr. J. H. Musser, at the same meeting, will hold two clinics and will give a clinical lecture on Disorders Due to Nutritional Errors and will give an address on Subacute Bacterial Endocarditis.

INFECTIOUS DISEASES IN LOUISIANA.

Dr. J. A. O'Hara, president of the Louisiana State Board of Health, in collaboration with the Treasury Department of the United States Public Health Service, has issued mortality weekly reports which briefly abstracted contain the following information. For the week ending August 20, the thirty-third week in the year, the following cases were reported: Syphilis 106, gonorrhea 67, pneumonia 48, tuberculosis 48, malaria 47, cancer 37, typhoid fever 35 and diphtheria 18. The typhoid fever cases were scattered over the State. Eight cases were from Orleans Parish, six of which were imported. There were six cases in Natchitoches Parish and 3 cases in Avoyelles.

For the thirty-fourth week ending August 27, the number of cases reported of syphilis was 39. A marked increase in pneumonia in the last three weeks as shown by the fact that 33 cases were reported whereas the 5-year average for the thirty-fourth week is 15. There were also reported 35 cases of typhoid fever, 31 cases of cancer, 27 of malaria, 32 of tuberculosis and 12 of gonorrhea. These parishes show the largest number of cases of typhoid fever: Orleans 15, Avoyelles 4, Caddo 3, Lafayette 3, Natchitoches 2, Bienville 2, DeSoto 2.

For the week ending September 3, 54 cases of syphilis were reported and 42 cases of gonorrhea. Typhoid fever was reported in 39 instances, malaria 34 cases, 28 of tuberculosis and diphtheria 20, pneumonia only 14 cases being reported. Other unusual diseases that were reported were, 1 case of typhus fever, 2 cases of poliomyelitis, and 3 cases of cerebrospinal meningitis.

For the week ending September 10, there was a marked increase in the cases of malaria, 62 cases being reported. Pneumonia had jumped considerably, 29 cases being recorded. The other diseases that were reported in double numbers included 35 cases of hookworm, syphilis 29, cancer 23, tuberculosis 28, typhoid fever 21 and diphtheria 22. Three cases of undulant fever were reported, two from Orleans Parish and one from Jackson. One of these from Orleans Parish was reported as imported.

HEALTH IN NEW ORLEANS.

The Department of Commerce, Division of Vital Statistics, has issued the following weekly reports concerning the health of New Orleans. For the week ending August 13, the death rate in New Orleans was 15.5, as the result of the deaths of 141 individuals, eighty-six of whom were white and 55 colored. There were 13 under the one year age, giving an infant mortality rate of 74.

For the week ending August 20, the death rate amounted to about the same 15.3. For this week there were 139 deaths, 82 of whom were white and 57 colored. There were 12 deaths under the one year age, giving an infant mortality rate of 68. For the week which ended August 27 there was somewhat of a decrease in the death rate. For this week 69 white and 57 colored individuals died making a total of 126, giving a death rate of 13.9. The infant mortality rate had decreased to 51 as a result of the deaths of only 9 babies. For the week ending September 3, the death rate was 14.0. The 127 deaths were di-

vided, 77 white and 50 colored. Twelve babies under one year of age died giving an infant mortality rate of 68.

For the first 35 weeks in the year the death rate in the City was 15.8 as contrasted with the rate of 17.1 in 1931.

THE SOUTHEASTERN SURGICAL CONGRESS FOURTH ANNUAL ASSEMBLY.

The attention of the medical profession is called to the announcement of the Fourth Annual Assembly of The Southeastern Surgical Congress which will be held in Atlanta, Georgia, March 6, 7 and 8, 1933.

The same high class program which characterized the second and third assemblies will be provided, also clinics will be conducted by some of the speakers.

B. T. Beasley, M. D., Executive Secretary.

THE AMERICAN COLLEGE OF SURGEONS' CLINICAL CONGRESS.

The twenty-second annual Clinical Congress of the American College of Surgeons will be held in St. Louis, October 17-21, with headquarters at the Jefferson Hotel. An instructive program of operative clinics has been prepared by the local Committee on Arrangements of which Dr. Evarts A. Graham is Chairman.

Hospital standardization conferences under the direction of Dr. Malcolm T. MacEachern will be held during the first four days. Four special program have been prepared dealing respectively with fractures, curability of cancer, industrial medicine and taumatic surgery, and the teaching of surgery and the surgical specialties. Medical motion pictures will be on daily exhibition. On Monday evening the John B. Murphy oration in surgery entitled, "Pillars of Surgery," will be delivered by Sir William I. DeCourcy Wheeler, M. S., F. R. C. S. I., Dublin, Ireland. On Friday evening the convocation will be held for the incoming Fellows, and the Fellowship address on "Some New Things in Physics" will be delivered by Robert Andrews Millikan, Ph.D., LL.D., Sc.D., Nobel Laureate. Dr. J. Bentley Squier will deliver the presidential address entitled, "The American College of Surgeons—Twenty Years of Ambitious Effort."

Among the features of the evening meetings will be the oration on fractures by Dr. Philip D. Wilson and the oration on industrial medicine and traumatic surgery by Dr. Frederic A. Besley. A special program on ophthalmology and otorhinolaryngology will be held at the Statler Hotel and there will be clinics on these subjects during the entire week in the St. Louis hospitals.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY.

The next written examination of the American Board of Obstetrics and Gynecology will be held on Saturday, October 22, at 2 p. m., in 19 different cities of the United States and Canada. In order to reduce traveling expenses for candidates special arrangement may be made through the Secretary for taking the written examination at any city other than those regularly specified where there is a Diplomate who can be empowered to conduct the examination. This arrangement does not apply to the general, clinical examination.

The next general, oral and clinical examination, is to be held in conjunction with the meeting of the Pacific Coast Society of Obstetrics and Gynecology at Los Angeles, California, on December 7, provided there are sufficient applicants.

Applications for these examinations should be filed immediately. Lists close for Group B applicants (see booklet) on October 5, and for Group A applicants on November 15.

For application blanks and other information. address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburg, Pennsylvania.

RESOLUTIONS ON THE DEATH OF DR. BOYKIN.

Whereas, it has pleased Almighty God in His infinite wisdom to remove from our midst Dr. P. A. Boykin; and

Whereas, Dr. Boykin was an active member as well as Vice-President of our Society; be it therefore

Resolved, That we the members of the Third District Medical Society, hereby express our deep feeling of appreciation of his worth as a member of our Society and our sincere sorrow at his untimely death.

Resolved, That we extend our sincerest sympathy to his family. Be it further

Resolved, That these resolutions be spread upon our minutes and copies be sent to the New Orleans Medical and Surgical Journal for publication.

L. B. Long, M. D.
A. C. Kappel, M. D.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, Editor

Jacob S. Ullman, Associate Editor *D. W. Jones, Associate Editor*

THAT WE MAY KNOW EACH OTHER BETTER.

William Henry Frizell, M. D., was born July 23, 1872 at Poplar Creek, the son of Dr. W. H. Frizell, Sr. He attended the Poplar Creek Academy and received his degree in medicine from the University of Nashville, March 24, 1897. He was located in his native village from 1896 to 1901 when he removed to his present location at Brookhaven. He attended the New York Polyclinic Post Graduate course and received his certificate together with a certificate in operative surgery in 1901.

Dr. Frizell served as county health officer of Lincoln County for twenty years under varying administrations until he was made a member of the Mississippi State Board of Health in 1930 for a term of six years.

He has been a member of the Mississippi State Medical Association since 1901, was made a member of the Council from the Eighth District in 1917 and served as a member of the executive committee of the Council until May, 1928, when he was elected president of the Association, for the year 1928-1929. He served the Association on its important committee on constitution and by-laws for the years 1930-1931 and 1931-1932, during which time numerous changes for the betterment of the Association were proposed and adopted. He was again elected to the Council from the Eighth District in April, 1932, and is now serving as secretary of that body.

W. H. FRIZELL, M. D.
Brookhaven, Miss.
Councilor, Eighth District, Mississippi State Medical Association.

Dr. Frizell served as organizing secretary of the Tri-County Medical Society in 1908, as its secretary for sixteen years, and as its president for one term.

He was a member of the draft board for Lincoln County for the period of the World War. He has been a member of the staff of the King's Daughters' Hospital of Brookhaven since its foundation and was chosen president of the staff for four terms.

Dr. Frizell was married to Miss Oline Holmes in October, 1899, at Texarkana, Ark. One year later she died leaving an infant daughter. He was married to Miss Bessie Crosby in December, 1902, at Hattiesburg. To this union were born three daughters and two sons.

He has served his community in various capacities, his school as trustee for one term, and his lodges in official capacities. He was chosen for the 1932 edition of "Who's Who in Government," by the Biographic Research Committee.

MEDICAL WRITING (Continued.)

From "The Art and Practice of Medical Writing," Simmons and Fishbein.—By permission.

"FANCIES VERSUS FACTS. — Conspicuous among returned manuscripts are the products of the theorist who, without scientific knowledge, claim that they have solved problems that are puzzling research workers and scientists. The number of physicians who have the courage to

discuss scientific problems concerning the fundamental and elementary principles of which they are entirely ignorant is larger than many imagine. Such papers usually are returned with the suggestion, circumspectly phrased, that an ounce of fact is worth a ton of theory.

"That every physician has a right to express his opinions, to advance theories and to make known his discoveries is an accepted principle, and he should not be denied this right by an editor without a good reason. But the reader also has his rights, and the editor should regard these as paramount. The reader has the right to demand that the editor shall not publish fiction for fact or fallacies which he—the reader—is not qualified to detect. The editor is supposed to have knowledge of the author and of his dependability that the reader cannot have. The reader certainly may expect that the editor will comb out such material as is obviously false.

"A well known physician sent to the editors for publication a paper in which he claimed that he had discovered a bacterial causative agent for a not uncommon, apparently noninfectious disease. If based on fact, the discovery was epoch making. The average reader, especially if he had not been trained in bacteriology, might easily have been deceived into accepting the author's statements as dependable evidence. To the bacteriologist, the organism was reminiscent of a common contaminator in careless work. But the author was a man of well earned national repute, and a frequent contributor to medical literature. Recognizing that the judgment of great men may be warped by over-enthusiasm, the editor, nevertheless, was influenced by the author's reputation; he felt that the responsibility in this instance should rest on the author, and the paper was accepted. In this case, the paramount rights of the reader were overlooked.

"On another occasion, a manuscript was submitted in which the author advanced the theory that both the cause and cure of cancer were matters of diet. The evidence submitted, however, was not convincing and the paper was returned, in spite of the fact that this author was nationally well known. Shortly afterward it appeared in an eastern journal. Its publication has done harm.

"Not long since, an article entitled 'The Etiology and Elimination of Tuberculosis' appeared in a medical weekly. It was full of fallacies and misstatements. For instance: 'The vaccine as employed against smallpox contains syphilis and is the primary cause of the white plague'; and 'syphilis is the primary lesion that allows the development of tuberculosis.' Further on the readers were told, as by one of authority, that syphilis is the cause of cancer. Undoubtedly, the readers of the journal in question sent some emphatic protests; but, instead of apologizing, the editor justified his action in publishing the article by saying: 'As it was writen by a physician practicing medicine, we decided that it should come to light, in spite of its weird conclusions. We believed that it should be presented before the medical profession and cause a healthy discussion.' The editor was not true to his readers. Far more harm is done in the publication of such fallacious matter than in procrastinating with, or in rejecting, a dozen papers offering new theories and new evidence which may be of value but which are not convincing."

(To be continued).

WHAT OTHERS SAY.

ARE WE HONEST?

"Here is another letter written in 1927 by a hospital superintendent of a 150-bed institution:

'I am weighing the situation. What do other men and women do in such positions? We say openly to the public in our campaign to raise funds, "Approved by the American College of Surgeons." Now our record librarian, our student nurses, and our graduate nurses know of many practices in the hospital which would not be approved. Non-emergency operations are constantly being done without securing full clinical data to confirm diagnosis, general staff conferences are few and far between, supplementary infection in cases handled by one of our surgeons is so constant as to be remarked upon by staff members and nurses, etc. One recent incident in the obstetric department which cannot be put upon paper is evidence of every wrong thing in hospital practice. Our young student nurses are keen these days. Some of the questions they ask in our courses in ethics I cannot answer frankly. Yet they get their examples in conduct from those around them. Loyalties—how shall they be interpreted? If the chief of my surgical service will not discipline and will not let the College of Surgeons discipline, how can I, a nurse, though I possess the knowledge of the College infringements, remedy the situation?"—Meta Peacock—Transactions of the American Hospital Association, 33:518, 1931.

PUBLICITY FOR SMALL HOSPITALS.

"A dozen years ago banks considered it unethical to use publicity. One day some banker said to himself, 'I have as much right as someone else to say what is ethical for my bank. I am going to publicize my bank.' Today it is ethical for banks to use publicity. A few years ago it was, by common consent I suppose, considered unethical for a hospital to say anything about itself, but today our hospitals have waked up to the fact that instead of hiding our lights under a bushel we have a duty to the public to let them

know what we are doing within our walls.

"A hospital is a business proposition—in fact a business, plus. Why then should it not follow good business principles and inform the public?" —Robert Jolly—Transactions of the American Hospital Association, 33:526-527, 1931.

EXPLANATION.

"Vicksburg, Mississippi.
"Sept. 5, 1932.

"Dear Mr. Editor:

"One of the most interesting features of modern medicine is that, every now and then, something that has been a mystery for ages is explained and made perfectly clear by some new diagnostic method.

"Those of us who have seen, and heard, Dr. Dan Williams of Gulfport on the floor of the House of Delegates—where he has been a familiar figure ever since there has been such a body—have frequently wondered at his lack of vision and his inability to see clearly even the simplest proposition.

"All this is now explained by that 'instrument of precision,' the camera. You will note from his photo in the last Journal that he has double pupils in both eyes. This causes a blurring and distortion of his vision, so that what we have always thought was a mental quirk turns out to be only a physical defect.

"Sincerely yours,
E. F. Howard."

ISSAQUENA-SHARKEY WARREN COUNTIES MEDICAL SOCIETY.

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held on Tuesday, September 13, at 7 p. m., at the Y. M. C. A., Vicksburg, with 19 members and three guests present. The scientific program included the following:

1. Acute indigestion.—Dr. G. W. Gaines.

Discussed by Drs. G. M. Street, W. G. Weston, E. F. Howard, F. M. Smith, and P. S. Herring. Dr. Gaines closed.

2. Osteomyelitis.—Dr. D. A. Pettit (In the absence of Dr. Pettit read by Dr. F. M. Smith).

Discussed by Drs. A. Street, Parsons, J. A. K. Birchett, Jr., and W. H. Scudder. Dr. Smith closed.

3. Some Interesting Urologic Problems.—Dr. T. P. Sparks, Jr.

Discussed by Drs. J. A. K. Birchett, Jr., P. S. Herring, A. T. Palmer, and A. Street. Dr. Sparks closed.

Dr. W. H. Parsons was chairman of the program committee for this meeting.

The meeting closed with a Dutch Lunch.

The next meeting of the Society will be held at the Y. M. C. A., Vicksburg, Tuesday, October 11 at 7 p. m. The committee in charge of the program consists of Dr. G. C. Jarratt, Chairman; Dr. E. F. Howard, Dr. L. S. Lippincott, Dr. P. S. Herring, Dr. B. B. Martin, Dr. A. K. Barrier, Dr. E. B. Stribling, Dr. J. B. Benton, Dr. W. H. Scudder, and Dr. M. J. Few.

MUTUAL AID SOCIETIES.

Since not all of our members take the Journal of the American Medical Association, this might prove of interest.

E. F. Howard.

"Newspapers recently announced that the physicians of Cuba employed by the mutual aid societies had revolted against the terms of their employment and that at the request of the president of Cuba they had agreed to postpone their strike for seventy-two hours. The president is studying the dispute, which is precipitated by a refusal of the societies to drop from their membership lists all persons financially able to pay regular fees for medical attendance.

"The situation thus precipitated in Cuba was called to the attention of the House of Delegates of the American Association in 1927 by Dr. J. M. Penichet, professor of ophthalmology in the University of Havana. The conditions of medical practice in Cuba are unusual. The population is slightly over 3,000,000 and there are about 3,000 physicians practicing in the island. This would seem to indicate approximately 1,000 available patients for each physician, whereas actually such is not the case. Some two-thirds of the population are affiliated with the Spanish mutual aid societies. About fifty years ago the Spaniards established this form of practice primarily to take care of laborers. For the sum of $2.00 a month, members of the society are entitled to medical care in case of illness. In addition, the societies have developed clubhouses, schools, libraries, gymnasiums, ballrooms and similar amusements, and in some instances they own banks. Physicians are employed on small salaries to provide medical care. There are approximately twenty of these health societies. One of them has at least 60,000 members and another some 20,000 members. In addition to hospitals they have exceedingly ornate and handsome clubhouses, which constitute a rallying place for their membership. Shortly the plantation owners and other wealthy patrons of these organizations decided to avail themselves of the same privileges as were accorded to the laborers. As a result the private practice of medicine began to fall into desuetude and therewith the medical profession itself began to retrograde. In his address to the American Medical Association in 1927, Professor Penichet pointed out that the mutual aid societies were able to function largely through exploitation of the medical profession. The physicians formed a federation to oppose these powerful trusts and to free the med-

ical profession. Previously to 1927 the profession had revolted twice, and there has been constant conflict since that time.

"In a trip recently made to Cuba by Dr. George H. Kress, editor of California and Western Medicine, he verified the status of the situation as related by Professor Penichet. In an account in his publication he pointed out its significance in relation to conditions in this country. The medical profession of our own country certainly cannot anticipate better treatment or more favorable consideration in relation to some of the schemes now being exploited here. Certainly the Cuban medical profession has been but poorly rewarded for some fifty years of trial of such practice in that country. Inevitably, the physician who in times of stress disposes of his medical birthright as a professional man finds himself the drudge of the group that has purchased his scientific freedom. The physicians in Cuba who are the employees of the mutual aid societies work day and night for a pittance and are so constantly driven by the excessive demands on their services that they are unable to give to any patient the individual medical attention necessary to intelligent and satisfactory medical care. The rich patrons under these contracts no doubt demand and receive better service than is rendered to the membership generally. The old psychologic and biologic laws which communistic propagandists would invalidate in reforming medical care go right on working and eventually invalidate the experiments."—Journal of the American Medical Association, August 27, 1932, pages 765-766.

HARRISON-STONE-HANCOCK COUNTIES MEDICAL SOCIETY.

September meeting will be held at the home of Dr. Rafferty, Pass Christian, Wednesday, September 7, at 7:30 P. M.

Papers by Drs. Carroll and Shipp.

Subject: Outstanding figures in early medicine.

There will also be a lawn party given by the Ladies' Auxiliary to which the members and their wives are invited.

E. A. Trudeau, Secretary.

Biloxi, Sept. 3, 1932.

JASPER COUNTY.

Dr. W. C. Simmons, formerly of Fouke, is now located in Bay Springs, with offices over the Johnston drug store.

J. B. Thigpen, County Editor.

Bay Springs, Sept. 4, 1932.

HINDS COUNTY.

Dr. Guy Verner of Birmingham has recently opened offices in Jackson, limiting his work to pediatrics. His offices are located in the Standard Life Building.

Dr. and Mrs. L. W. Long are the proud parents of a fine young son, born August 16.

Dr. and Mrs. G. C. Russell, with their charming young daughter, have just returned to Jackson from Rochester where Dr. Russell spent most of his time at the Mayo Clinic.

Dr. and Mrs. Levy McCarty are receiving congratulations upon the arrival of a fine young ten-pound boy, born August 31.

Dr. T. J. Crofford, Jackson, has been confined to bed at the Baptist Hospital for about two weeks. We hope for him a speedy recovery.

The regular monthly staff meetings of the Jackson Infirmary and Baptist Hospital will be resumed in September. We hope that many doctors from out of town will take advantage of these splendid meetings.

Dr. and Mrs. H. C. Sheffield and family have just returned home after spending a most delightful two weeks at Stafford Springs.

Dr. Robin Harris has recently returned to Jackson after a most pleasant trip to California.

Dr. Thompson of Carthage has recently opened offices in Jackson for the general practice of medicine.

Dr. H. R. Shands is away on his regular summer vacation and will spend a time at the Mayo Clinic.

William F. Hand, County Editor.

Jackson, Sept. 5, 1932.

NESHOBA COUNTY.

Drs. W. R. Hand, W. H. Banks, A. L. Majure and J. S. Hickman attended the last meeting of the East Mississippi Medical Society which was held at the country home of Dr. B. L. Robinson, about three miles outside the city limits of Meridian. They all reported a fine time from the social as well as the business standpoint. Have us again, Dr. Robinson.

Drs. A. L. Majure, W. H. Banks and S. L. Perry, who live in the rural districts of Neshoba County, are seen a little more often in Philadelphia. I presume they are getting in the habit so that they can watch to see if their victims are selling any cotton. I don't think there is any use, boys, as what cotton is left after the Federal aid is paid and the gale has left won't pay for your trouble of staying up here.

Dr. J. S. Hickman has been indisposed for several weeks and several days ago he had Dr. Charlie Harrison to remove his tonsils. He is still sick, but is expecting a great improvement in the near future. This is the first time Dr. Hickman has attempted to practice any of his own preachings.

Dr. and Mrs. Granville Hand of Quitman visited friends and relatives here this week end.

We noticed that Dr. Baily of Meridian is visiting here this week end. At first we thought it was relatives who were the cause of Dr. Baily's many visits but now we know differently.

J. S. Hickman, County Editor.

Philadelphia, Sept. 5, 1932.

MONROE COUNTY.

"The melancholy days have come—the *dullest* of the year." The sad feature of the case is that your correspondent has, absolutely or nearly so, no news to submit to you, nor has he any kind of communication that he thinks might be of interest to our members. The weather has been too hot and I am too barren of original ideas to dare make any suggestions or advance any opinions either governmental or scientific. Yet I am under obligations to "punch the *bell*" (not the *ball* as I was made to say in my last). When I accepted the post of county editor, I tacitly agreed to answer present on each roll-call. "Do your duty tho' the heavens fall" has been a favorite slogan and admonition with me for all the years. So here I am tho' I come empty handed.

During the last month our town (Amory) has been visited by two of our young doctors who were of us but went out for us—they were reared here and their parents live here. These parents are justly proud (so are we all) of these young medicos. One of them is the son of Dr. I. P. Burdine, long a practitioner of our town and one of the most popular and brilliant members of our society. The young man is his father's name-sake, Ira Price Burdine, Jr. He is a graduate of the University of Mississippi and of Tulane, has served an internship at the Charity Hospital in New Orleans, and is now with Dr. Walley in Jackson. Ere long we expect to hear great things of him.

The other young fellow is (or was) a protege of mine. I refer to Dr. Clel Holland, now of Houston, Texas. He has been located there for about two years. He is also a product of "Ole Miss" and Tulane. After his interne year in Shreveport, La., he secured a fellowship at Crile's—more properly at the Cleveland Clinic. After two years there he went for a time to Baltimore and was under the tutelage of Hugh Young. From there he went direct to Houston, Texas, and "bearded the lion in his den." Keep your eyes on Clel Holland—he is bright—he is educated—he is equipped—he is well fitted for success and he will achieve it. We are proud of him.

In closing I must, with regret and much sorrow, chronicle a sad thing to us all—especially so to me—namely, the fact that our president, Dr. W. C. Spencer, of Tupelo, has suffered a slight paralytic stroke. He is improving and will, probably, soon be well again. But at a recent visit I made him, he told me that he did not expect to re-enter his work as physician. May God bless and comfort him for we love him dearly.

Again, I report, with pain and sympathy with and for his son, our fellow member, Dr. W. A. Toomer (also of Tupelo), the death of his aging father. So it goes in life. All that counts in life is our friends and we enter into, both, their joys and their sorrows.

G. S. Bryan, County Editor.

Amory, Sept. 5, 1932.

CHAMBERLAIN-RICE HOSPITAL.

Dr. James C. Rice of the Chamberlain-Rice Hospital has announced that the officers and directors of the institution have decided to use only graduate nurses in the operation of the hospital. Nurses who are at present in training will be permitted to complete their courses but no new students will be accepted.

In speaking of the change, Dr. Rice pointed out that the National Association of Graduate Nurses has properly made a study of the supply of graduate nurses and has reached the conclusion that too many are graduated each year, producing a crowded condition in the profession that is leading to increased unemployment. The Association is urging that all institutions that can do so suspend the operation of their training schools and use graduate nurses until the period of this emergency is over. If, in due course of time, conditions become so that additional graduate nurses are required for the welfare of the public, the hospital will gladly return to the training school and do its part toward filling this need.

L. Wallin, County Editor.

Natchez, Sept. 7, 1932.

LEFLORE COUNTY.

Dr. E. R. Shurley has moved from Money to Glendora.

Dr. F. M. Sandifer has returned from the Mississippi Coast and New Orleans after a ten day's visit.

Drs. O. H. Swayze, Yazoo City, and B. H. Booth, Drew, were recent visitors to Greenwood.

Dr. G. H. Wood, Jr., of Longview, Texas, son of Dr. G. H. Wood, Batesville, and Miss Frances Gray, of this place, will be married here the latter part of October. They will make their home in Longview, Texas.

The Delta Medical Society will meet in Greenwood, Wednesday afternoon, October 12.

Dr. C. C. Applewhite, formerly of the State Board of Health, but now with the United States Public Health Service at Boston, Mass., visited our county health unit in September.

W. B. Dickins, County Editor.

Greenwood, Sept. 7, 1932.

JEFFERSON DAVIS COUNTY.

Dr. G. S. Bryan has moved from the northern part of the county to Oakvale in Lawrence County.

Dr. H. G. Williams is confined to his bed in the Jackson Infirmary where he has been since August 26, with duodenal ulcer. We are glad to report his gradual recovery.

Dr. G. C. Terrell, county health officer, reports a busy time this summer in health work, having held 50 typhoid clinics in the county and given more than 6,000 "shots." The people are more and more demanding this vaccination.

Dr. G. C. Terrell and family spent a few days the first of this month down on the coast on a vacation. He reports neither fish nor mosquitoes biting. They returned very much recreated.

G. C. Terrell, County Editor.

Prentiss, Sept. 7, 1932.

SIMPSON COUNTY.

As the result of the efforts of Dr. R. E. Giles, county health officer, Simpson County inhabitants are 90 per cent innoculated against typhoid fever.

The doctors on the staff of the State Tuberculosis Sanatorium meet regularly every Monday night. Every county doctor is invited to these meetings which are very instructive and beneficial.

Malaria is more prevalent in the county at present than it usually is at this season of the year.

I am glad to report that Dr. M. M. Magee, Magee, who was sick at the time of my last writing, is able to resume his work.

The family of Dr. W. W. Diamond has just returned from a very much enjoyed vacation.

It has been necessary to increase the number of nurses on the staff of the Magee Hospital due to the growing number of patients admitted. Personally, I think the manner in which this small hospital has been received and supported by the people goes to prove that every community should have a hospital, that it helps the community both commercially and socially, and that it aids in the general welfare of the people.

E. L. Walker, County Editor.

Magee, Sept. 7, 1932.

ISSAQUENA COUNTY.

Trip to Washington—Continued

I left off in my last installment where our train lit after sailing over the mountain tops near Lynchburg. After reaching earth again the relief was so great that I dozed off and slept from hades to the usual morning meal.

When I awoke we were nearing Petersburg. It is one of our country's oldest cities, full of historic interest. Many incidents occurred here that helped shape the destiny of our nation, and from its very infancy.

The country was level and sandy. In making the curves in this safe, level country I discovered that the outer rail was now highest. Why had they not built the railroad that way back on those mountain sides!

When we pulled in at the station a parade was passing, with bands playing and flags flying. The Confederate reunion was on in Richmond, and the Petersburg battlefield near by was to be dedicated that day. An old Confederate soldier, all the way from Texas, proposed that we stop over and see the ceremonies. He had been there during the siege sixty-seven years ago, and wanted to see the place again. Autos were at the train waiting for the veterans and their attendants, and we were soon driving over the battlefield.

After the usual patriotic speeches, songs and music we visited the siege lines and the site of the famous "crater." My old comrade was near by when the mine was touched off on that memorable occasion, and he gave me a vivid description of the scene. Part of a regiment of South Carolinians were caught and buried in their trenches by the mass of earth thrown up by the explosion. They were left where they died, literally buried alive. A similar incident occurred in one of the battles of the World War. Some allied soldiers were entrapped and buried in their trenches by earth thrown up by a terrific explosion. Only a line of bayonets sticking out of the earth remained to show where they met death. History repeats itself, but under what different surroundings did these two incidents occur!

We next went through the War Museum near the "crater." It is just a small affair, but in it were two things picked up on the battlefield that impressed me. One was two long, conical bullets locked together. They were probably well spent in their flight, and met at right angles, one richocheting as it struck, wrapped itself partially around the other, holding it in firm embrace. The second was the meeting, point to point, in mid air, of two minie balls of the same calibre and velocity. The result of the impact was a flattened disc of molten lead about the size of a silver dollar, with a thin segment of the base of each bullet showing intact on each side of the disc. These two relics deserve a place in the "Believe It or Not" column.

Returning from the museum we stopped at Old Blanford Church and Cemetery. The church was built two hundred years ago. The cemetery is one of the most notable in the country. In it are buried soldiers of six wars, among them 30,000 Confederates.

Petersburg was settled about the same time as Jamestown. It has been an important stragetic point in three wars. The first was the Revolutionary War, and next in the War of 1812. During the War Between the States, from the very beginning, it was the key to Richmond. Its fall, on April 2, 1865, sounded the death knell of the Confederacy.

We returned to the city over the famous "Jerusalem Road" leading from Petersburg to the

Jewish cemetery. I did not learn how it got its name.

We were soon aboard the train among a lot of jolly old Confederates returning from the dedication ceremonies. They were trying to sing their oldtime camp songs of near seventy years ago, and shouting with feeble, cracked voices, "On to Richmond."

(To be continued)

W. H. Scudder, County Editor.

Mayersville, Sept. 11, 1932.

PRENTISS COUNTY.

Born to Dr. and Mrs. W. H. Anderson on July 21, a daughter, Elizabeth Jane, at the Baptist Hospital in Memphis.

Dr. L. L. McDougal, formerly on the staff of the Mississippi State Hospital, Jackson, has recently returned to Booneville, where he will resume private practice.

Dr. W. M. Adams, who has been interning in New York City, is at home for a short visit. He will leave in a few days for Brooklyn where he will take a special course in eye, ear, nose and throat work, having an appointment in the Brooklyn Eye, Ear, Nose and Throat Hospital.

Dr. E. J. Green was a professional visitor to Booneville this week.

The Mississippi section of the Journal is growing lustily under the guidance of Dr. Lippincott. The doctor is to be congratulated on his excellent work.

R. B. Cunningham, County Editor.

Booneville, Sept. 10, 1932.

JACKSON COUNTY.

A joint meeting of the staff of the Jackson County Hospital and the Jackson County Medical Society was held September 8, with a good attendance. A number of cases were reported and discussed at length. The routine business of both organizations was transacted.

Since the last report Dr. J. F. Busey of Pascagoula has been elected to membership in the society and to the staff.

Dr. F. O. Schmidt, another recent addition to the medical forces at Ocean Springs, was also elected to the staff. He had been elected to membership in the medical society at the June meeting.

Dr. R. C. Eley underwent a nasal operation at the hospital last week and has fully recuperated.

We regret to report the death of Mrs. H. H. Colle of Pascagoula, secretary of the board of directors of the hospital and one of its most active members.

PROSPERITY PEEPING AROUND THE CORNER.

"dr mac please sir come to my house this morning august the 30 1932 fannie eckles

"i will have the money for you"

Note: Found on my desk on the morning of the above date.

S.B. McIlwain, County Editor.

Pascagoula, Sept. 9, 1932.

CLAIBORNE COUNTY.

The county health officer, Dr. W. N. Jenkins, has been busy giving typhoid vaccine. This work is principally being done among the negroes of the county.

Born to Mr. and Mrs. Paul Green, a son Paul, Jr. Mrs. Green is the daughter of Dr. A. L. Chapman, Hermanville.

W. N. Jenkins, County Editor.

Port Gibson, Sept. 10, 1932.

LAUDERDALE COUNTY.

Lauderdale County has sustained a distinct loss in the death of Dr. B. D. Pace of Bailey, on August 20. As he attended the meeting of the East Mississippi Medical Society of recent date, his going was sudden.

Dr. J. T. Googe is leaving with his family across country, Saturday, September 10. He has a scholarship at Harvard University in Boston, Mass. We shall miss him and Mrs. Googe and the three children greatly. They were entertained at their pastor's home for dinner last evening. This personage is Dr. R. H. Griffin, who serves not only his church but community interests as well.

Mrs. W. Jeff Anderson is improving at her home in Meridian following an illness and treatment in a hospital in Birmingham, Ala.

Dr. and Mrs. Leslie Rush have announced the birth of a daughter named Beryl. Mrs. Rush and baby have returned home from Rush's Infirmary.

Drs. A. C. Bryan and F. G. Riley have returned to their respective fields following absences from the city.

Dr. G. V. Galloway has resumed duties at the Lauderdale County health unit. He succeeds Dr. J. T. Googe who has a leave of absence for study.

Dr. and Mrs. Charles T. Burt happily report the advance in school of their little daughter, Frances Milbrey Burt. Also, as temporary chairman, Mrs. Burt with Mrs. T. L. Bennett, temporary Secretary, are working towards the organization of an Auxiliary to the East Mississippi Medical Society.

Dr. Sara A. Castle, for many years a practitioner of medicine in the city of Meridian, and who for some time owned and was medical director of the Meridian Sanatorium recently was selected as physician for the Mississippi State College for Women at Columbus.

Dr. Castle is one of the best trained physicians

of the State and has done outstanding work in many phases of medicine, especially in the early years when pellagra first came in for consideration in this country. She contributed largely to the literature on that subject. She leaves for her new post of duty the fourteenth of September.

Dr. J. T. Googe, who has been director of the Lauderdale County Health Department since its establishment in 1928, leaves temporarily to accept a fellowship in the Harvard School of Public Health, Boston. Dr. D. V. Galloway, who for a number of years was director of Coahoma County Health Department, relieves Dr. Googe while he is on the fellowship. Dr. Galloway obtained his master's degree in public health at Harvard in June.

Charles T. Burt,
County Editor.

Meridian,
September 9, 1932.

NOXUBEE COUNTY

Dr. S. W. Salter has about recovered from the injury he sustained in an automobile accident in Memphis, Tenn., several weeks ago. He made a trip to Jackson recently, and also to Hazelhurst to visit his mother.

Dr. S. F. Hill made professional trips to Birmingham, Ala., twice during the month.

Our county has had splendid campaigns during July and August against typhoid fever and diphtheria. During the month of July, J. W. Dugger of the State Health Department vaccinated three thousand or more persons against typhoid and several hundred children against diphtheria. During the month of August your county editor who is also county health officer, with the assistance of Dr. S. F. Hill and Mrs. Gladys McKenzie, vaccinated 1600 against typhoid and 124 against diphtheria.

Miss Chambers, a graduate nurse, assisted in the work by vaccinating 140 against typhoid and 40 against diphtheria. At Cooksville, Dr. J. L. Melvin of Shuqualak, assisted by his son, Dr. G. D. Melvin, who was at home on vacation, gave 2400 typhoid vaccinations besides a number of diphtheria vaccinations. I venture to say that no other county in the state with a part time health officer can give a better record of immunizations. Other doctors in the county cooperated in the work but I did not get the data on what was done. We were glad to have Dr. Dugger with us to inaugurate the campaign which has resulted in such a large number being immunized against these diseases.

E. M. Murphey,
County Editor.

Macon,
September 9, 1932.

EAST MISSISSIPPI MEDICAL SOCIETY

The East Mississippi Medical Society met on Thursday afternoon, August 18, at the country home of Dr. B. L. Robinson, two miles out from Meridian. Guests of honor at this meeting were Dr. James M. Acker, Dr. L. S. Lippincott, Dr. Horton Casparis, associate professor of pediatrics, Vanderbilt University, and Mrs. W. C. Pool, president of the Women's Auxiliary to the Mississippi State Medical Association. There were seventy-eight present including members and guests.

The following program was presented:

1. Anemia in Disease.—Dr. L. S. Lippincott, Vicksburg. Discussed by Dr. Horton Casparis.
2. The Acute Surgical Abdomen.—Dr. E. L. Richardson, Louisville. Discussed by Drs. L. V. Rush, W. J. Anderson, K. T. Klein and W. R. Hand.
3. Diphtheria in Children.—Dr. F. G. Riley, Meridian. Discussed by Drs. G. L. Arrington, Horton Casparis, W. R. Hand and W. H. Banks.

Dr. Horton Casparis addressed the society on "Tuberculosis During Childhood."

Dr. James M. Acker made an official address, in which he lauded the work of the society and classed it as one of the foremost in the state.

Mrs. W. C. Pool addressed the doctors' wives relative to organizing a local auxiliary to the medical society.

After the meeting a picnic lunch was served. Dr. W. H. Banks acted as toastmaster.

The next regular meeting will be held at the Lamar Hotel, in Meridian on Thursday afternoon, October 20.

T. L. Bennett,
Secretary.

TIPPAH COUNTY

Dr. W. C. Walker, "The Grand Old Man from Houlka," has been here a few days this week, visiting his daughter, and mixing with his doctor friends. He lately has been in Memphis for treatment, and all his many friends are rejoiced in his improvement, and truly hope he may be among us for years to come.

Miss Elizabeth Merritt of Blue Mountain, daughter and grand-daughter of Tippah County doctors, has been seriously sick for several weeks. At this time she is considered to be well on the road to recovery to the delight of her family and many friends.

Dr. W. M. Adams, after some months' stay in New York, in one of the hospitals, has been home for some days. He is much improved in health, and expects to go to Long Island next month to take work in one of the hospitals.

Dr. John Tate, who completed his interne course in Charity Hospital, Shreveport, in June,

has gone to Phi'adelphia, Pa., where he is in a hospital.

Dr. A. V. Murry, who received his degree at Tulane in June, and then secured a Mississippi license, has gone to Shreveport to serve his interneship. This city seems to be favored by the students from this county, as we have had one there for the past three years. Dr. H. P. Clemmer, Ripley, two years ago, Dr. John Tate, Blue Mountain, last year, and now Dr. A. V. Murry, Ripley.

The county health officer, with the help of doctors in the several districts, has been busy giving typhoid vaccine the past month. In addition diphtheria vaccinations are to be given the balance of the year by the county health officer, the Board of Supervisors having provided for this.

Miss Mary Miller Murry has gone to Kosciusko where she will teach this session.

C. M. Murry,
County Editor.

Ripley,
September 9, 1932.

WINSTON COUNTY

Our community is as a rule extremely healthy. Some typhoid and some malaria existing.

Dr. W. W. Parks spent a few days this week in New Albany visiting.

Dr. and Mrs. Bernard Hickman went to Meridian shopping one afternoon this week.

Dr. S. W. Pearson spent a few days in Memphis on business this week.

Mrs. M. L. Montgomery spent a few days in Memphis visiting friends last week-end.

Dr. W. A. Young was on the streets in our city this week, and as the rest of us, spoke of having extreme leisure these days.

We have had several patients sent to Meridian and other hospitals this month for treatment.

We appreciate so much the genuine courtesy shown us now by the doctors in charge of the charity hospitals.

M. L. Montgomery,
County Editor.

Louisville,
September 9, 1932.

YAZOO COUNTY

Drs. W. E. Noblin and N. C. Womack of Jackson spent a few days fishing in Yazoo County last week. We hope they had luck and it will be all right if they only carried fish with them to Jackson.

Dr. John Darrington, Yazoo City, made a hurried trip to Memphis as a guest at a banquet given in honor of Dr. J. A. Crisler. I know all had a royal time.

Dr. L. Q. Hall of McComb has recently located at Bentonia. We are glad to have Dr. Hall with us.

Dr. Busby of Phoenix was operated upon at the King's Daughters' Hospital, Yazoo City, last week and is reported doing well.

Dr. C. H. Hogan died at Satartia on August 18 and was buried in Yazoo City on August 19. Sorry to note his passing.

We hear Dr. Joe Roberts is doing well at his new home in Longview, Texas.

C. M. Coker,
County Editor.

Eden,
September 7, 1932.

AN OPENING

"Satartia, Mississippi,
"September 8, 1932.

"Since Dr. Hogan died, we have no doctor here at all and we need one. Its a dandy good location for a country doctor and any good doctor can do well here. If you should have occasion to hear or see a doctor looking for a location send him up. He can go to work at once. We have very good crops,—cotton and seed both bringing very good price.

"If you can help us, sure will appreciate it.

"Yours truly,
"G. R. Lewis."

PONTOTOC COUNTY

Health of the county is fine. Very little sickness. Most any day can see three or four out of town physicians.

Dr. C. D. Mitchell of Jackson made us a short visit yesterday.

Dr. J. U. Abernethy, recently of Marks, now located at Troy, was operated on a few days ago at the Baptist Hospital at Memphis, Tenn.

Our next Northeast Mississippi Thirteen Counties Medical Society meets at Houston.

No deaths, births or marriages in the medical families of the county.

R. P. Donaldson,
County Editor.

Pontotoc,
September 5, 1932.

LAWRENCE COUNTY

I am enclosing a clipping from the little county paper at Monticello in which is the report of our medical association meeting. I am sending it as my report from Lawrence County. I am economizing, you see. There is not much to report from this county and Dr. Frizell usually beats us to these county meetings.

"A meeting of the Tri-County Medical Society was held in the courthouse here Tuesday with Dr. A. B. Harvey of Tylertown, president, presiding and Dr. H. R. Fairfax of Brookhaven serving as secretary. There were representatives present from Lincoln, Lawrence and Walthall counties with Dr. J. Gould Gardner of Columbia present from Marion County. . . . Announcement was made of the next meeting which will be held in Brookhaven in December and of the district meeting embracing a larger number of counties to be held on October 11 at McComb."

B. S. Waller,
County Editor.

Silver Creek,
September 15, 1932.

EIGHTH COUNCILOR DISTRICT

The annual meeting of the Eighth Councilor District will be held at 12 noon, October 11, at the Methodist Church, McComb. The program as announced by Dr. W. H. Frizell, Brookhaven, councilor and chairman, and Dr. T. Paul Haney, Jr., McComb, secretary, is as follows:

PROGRAM

Lunch, 12 noon, Methodist Church.

1. Dr. R. A. Strong, Professor of Pediatrics, Tulane University, "Aspiration Treatment of Empyema in Children."
2. Dr. N. F. Thiberge, New Orleans, Louisiana, "Some Interesting Cases of Allergy," illustrated.
3. Dr. F. E. LeJeune, Professor of Otolaryngology, Tulane University, "Hoarseness," with moving picture demonstrations.
4. Dr. G. C. Anderson, Professor of Neurosurgery, Tulane University, "The Diagnosis and Localization of Brain Tumors."
5. Dr. J. H. Musser, Professor of Medicine, Tulane University, "The Management of Thyroid Disease."
6. Dr. J. M. Acker, Jr., President, Mississippi State Medical Association,—an address.
7. Dr. J. W. D. Dicks, President-elect, Mississippi State Medical Association.—an address.
8. Dr. J. Gould Gardner, President, Mississippi State Hospital Association,—an address.

PIKE COUNTY MEDICAL SOCIETY

The Pike County Medical Society had its regular meeting September 1. A most interesting clinic was held during the afternoon from 1:30 to 4:00 p. m., at which Dr. James S. McLester, Professor of Medicine, University of Alabama, received patients for consultation. Each physician presented his own patients to Dr. McLester. At 6:30 p. m. dinner was served at the Baptist Church after which Dr. McLester gave a most interesting and beneficial lecture on "The Course and Treatment of Nephritis."

The Pike County Medical Society will hold its regular October meeting in conjunction with the Eighth Councilor District Medical Meeting, October 11, at McComb.

T. Paul Haney, Jr.,
Secretary.

McComb,
September 12, 1932.

WASHINGTON COUNTY

Dr. T. F. Willson of Arcola was recently elected to a place on the Board of Directors of the Washington County Chapter of the American Red Cross.

Dr. John Fair Lucas of Greenville attended the meeting of the Central Association of Obstetricians and Gynecologists at Memphis, Tennessee, September 15 to 17.

Drs. Payne, Hirsch, Beck and Eubanks are now located in their new offices on the second floor of the Weinberg Building, in Greenville, which were recently remodeled so as to give them more space than they occupied on the fourth floor of the same building. These offices were arranged to suit their particular needs and are modern in every respect.

Dr. and Mrs. Paul Gamble of Greenville have recently adopted two small orphan children, a boy aged two years who was given the name of Paul, Jr., and a girl, six months old who was named Mary.

Dr. O. H. Beck of Greenville spent a most enjoyable week on the Gulf Coast early in September with a party of four other Greenville citizens, on a fishing trip after the "big ones."

The many friends of Dr. H. R. Miller of Lamont and Greenville are very sorry to learn that he has been in quite bad health for some weeks now, and all are wishing for him a speedy recovery.

Dr. J. A. Beals of Greenville will read a paper on "Modern Urographic Methods" before the meeting of the Delta Medical Society, which meets in Greenwood on October 12.

Dr. and Mrs. Paul Gamble and two children visited friends and relatives in Nashville, Tennessee, lately.

Most all of the doctors of Washington County are making their plans to attend the meeting of the Delta Medical Society in Greenwood on the second Wednesday in October. Greenwood always furnishes a good meeting.

F. M. Acree,
County Editor.

Greenville,
September 10, 1932.

OKTIBBEHA COUNTY

Dr. Felix Long has recently returned from a trip with his son, Felix, Jr., who was on Eagle Scout Flight through Old Mexico. Both report a wonderful time.

Dr. J. W. Eckford recently enjoyed a fishing trip out on the gulf from the Mississippi coast.

J. S. Scales, son of the late Dr. S. W. Scales of this place, recently married Miss Frances Summers Ray, daughter of Rev. and Mrs. J. D. Ray of this place. Mr. Scales and his bride will be domiciled at Aberdeen, where he is teacher and coach in the high school.

H. L. Scales,
County Editor.

Starkville,
September 9, 1932.

SARPHIE-FRIZELL

Dr. and Mrs. W. H. Frizell
announce the marriage of their daughter
Elizabeth
to
Mr. Jack Ellis Sarphie
on Thursday, the eighth of September
Nineteen hundred and thirty-two
Brookhaven, Mississippi.

SOUTH MISSISSIPPI MEDICAL SOCIETY

The South Mississippi Medical Society met in Laurel, September 8, at 3 p. m., and the following program was carried out:

Address of Welcome.—Hon. G. W. Hosey, Mayor-elect of Laurel.

Response.—Dr. H. L. McKinnon, Hattiesburg.

The Doctor in the Court Room.—Hon. Ellis B. Cooper, Laurel.

Professional Ethics.—Dr. H. S. Tucker, Laurel. Discussed by Drs. J. R. Kittrell and A. M. Harrelson.

Stricture of Oesophagus.—Dr. Lucien Landry, New Orleans. Discussed by Drs. L. B. Hudson and J. S. Gatlin.

Hookworm Disease, A new Treatment.—Dr. Harvey Garrison, Sr., Jackson. Discussed by Dr. Joe Green, Laurel.

Tumors of Bladder.—Dr. Edgar Burns, New Orleans, La. Discussed by Dr. R. T. McLaurin.

Mitral Regurgitation.—Dr. B. F. Hand, Waynesboro. Discussed by Dr. B. T. Robinson.

The banquet was served immediately after the meeting at the Pinehurst Hotel. There were 73 doctors present at this meeting which was a record. We felt honored to have the President of the State Medical Association, Dr. James M. Acker of Aberdeen, with us and also Dr. F. J. Underwood and Dr. H. C. Ricks of the State Board of Health in Jackson.

Dr. F. T. Bower of Hattiesburg is spending his vacation in Detroit, Mich., with his parents, Mr. and Mrs. D. L. Bower. He will visit some of the larger clinics in the east while there.

Dr. H. K. Rouse, Jr., son of H. K. Rouse, Sr., Chancery Clerk of Pearl River County, has completed his internship at the Louisiana State Charity Hospital, New Orleans, La., and has located at Ponchatoula, La., for the practice of his profession. I am sure that we shall soon be hearing of the good work that he is doing.

Dr. L. B. Hudson has returned from a vacation on the Gulf Coast at Ocean Springs.

J. P. CULPEPPER, JR.,
Secretary.

Hattiesburg,
September 14, 1932.

NORTH-EAST MISSISSIPPI THIRTEEN COUNTY MEDICAL SOCIETY

The regular quarterly meeting of the North-East Mississippi Thirteen County Medical Society was held in the First Methodist Church at Houston, Tuesday, September 20, at 2 p. m. The program as announced by the secretary, Dr. J. M. Acker, Jr., Aberdeen, was as follows:

1. Meeting Called to Order.—Dr. W. C. Spencer, President.

2. Invocation.—Rev. W. C. Steward.

3. "Some Practical Reflections on the Present Day Status of the Medical and Surgical Treatment of Goiter."—Dr. E. M. Holder, Memphis, Tenn.

4. Address.—Dr. J. G. Garner, Columbia, President, Mississippi State Hospital Association.

5. "Community Hospitals and their Relation to Medical Education."—Dr. J. A. Rayburn, Pontotoc.

Discussion opened by Drs. Anderson and Caldwell.

6. "Pulmonary Hemorrhage with Special Reference to Treatment."—Dr. W. A. Toomer, Tupelo.

Discussion opened by Drs. J. W. Eckford and B. J. Shaw.

7. "Diabetes Mellitus."—Dr. S. K. Gore, Mantee.

Discussion opened by Drs. Deanes and Aycock.

8. "Pneumonia."—Dr. F. L. McGauhy, Calhoun City.

Discussion opened by Drs. Honnoll and Neel.

9. Business Session.

10. Banquet immediately after adjournment in the banquet hall of the Masonic Building. Doctors and their wives are especially urged to remain for this banquet.

MISSISSIPPI STATE BOARD OF HEALTH

Within the next few weeks, Dr. James R. McCord, Professor of Obstetrics and Gynecology, Emory University School of Medicine, will give courses of lectures on obstetrics and gynecology at the following places: Grenada, Booneville, Kosciusko, and Clarksdale. Physicians from the surrounding territory from each point are cordially invited and urged to attend.

Dr. A. L. Gray, Director of the Copiah County Health Department, and Dr. J. T. Googe, Director of the Lauderdale County Health Department, have left for Harvard University where they will study for a year.

Dr. George E. Riley, for the past several years in charge of malaria control activities of the State Board of Health, has been awarded a fellowship for one year's study at Johns Hopkins University.

Dr. C. C. Applewhite, who has been assigned by the U. S. Public Health Service to Mississippi a Director of the Bureau of County Health Work, State Board of Health, for the past ten years, left last week for Boston. Dr. Applewhite will act as an instructor in the School of Hygiene and Public Health and at the same time will work on his master's degree in public health.

The following resolutions were adopted by the State Board of Health at its meeting on June 27:

"Having cognizance of the untiring and valuable services performed by Dr. C. C. Applewhite since the beginning of his association with the Mississippi State Board of Health, the members of the Board, in regular meeting assembled on June 27, 1932, wish to express to Dr. Applewhite their appreciation of his services as a public health official.

"There are ample fruits of Dr. Applewhite's labors for the enrichment of the citizenship of those counties in Mississippi having full-time health departments. In these counties, there are striking evidences of practical echievements under his guiding hand. The effectiveness of the public health program owes much to his participation. In the three phases of public health work, education, vaccination, and sanitation, perhaps his most outstanding accomplishments have been in the field of sanitation.

"Dr. Applewhite has not only served his church well but has carried religion into his business and wherever he has gone. Integrity, ability, and loyalty are brought into high relief in his life.

"It is with regret that the Board learns that Dr. Applewhite will be transferred from Mississippi in October of this year and each member of the Board extends best wishes for his success in the future."

(Taken from minutes of the June 27, 1932, meeting of the State Board of Health.)

TRI-COUNTY MEDICAL SOCIETY

The Tri-County Medical Society met in regular quarterly session in Monticello, September 13, at noon. After lunch at the hotel, members repaired to the county court house for the scientific program. Dr. A. B. Harvey, Tylertown. is president of the Society and Dr. H. R. Fairfax, Brookhaven, is secretary. There were fifteen present.

Dr. J. Gould Gardner, Columbia, President of the Mississippi State Hospital Association, was the guest of the Society and made an official address on Community Hospital matters and correct hospital plans for betterment of the indigent as well as other classes of people.

The scientific program as follows was given and evoked much constructive comment.

Dr. B. S. Waller, Silvercreek, gave an excellent paper on "Pellagra," which was well received and discussed.

Dr. J. W. Wilson, Monticello, next read a valuable paper on "Advantages of the Small Laboratory." He gave the benefits derived even from a small office outfit. This paper met with much applause.

Dr. O. N. Arrington, Brookhaven, gave an extended discussion on "Gastric and Duodenal Ulcers," and quoted from many able contributors to this quite common ailment. This paper brought out many valuable thoughts.

Dr. W. R. May, Brookhaven, being unavoidably detained by official duties, was unable to give his paper on "Prevention of Infectious Diseases in School Children."

President Harvey named the regular committees for the annual meeting for December 13, to be held in Brookhaven, where the annual banquet will be given.

Dr. M. E. Arrington was elected to membership in the Society. He has recently opened an office in Brookhaven.

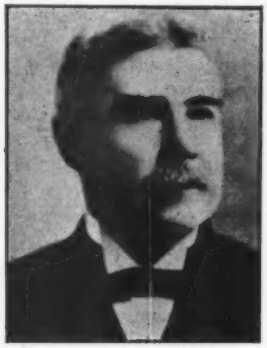
Dr. W. P. Tucker left Brookhaven today for his new location in Arizona. Dr. Tucker while in Brookhaven made a most favorable impression on the doctors here as well as his clientele. He has the profession's best wishes in his new field.

Brookhaven doctors attended this meeting 100 per cent,—every doctor being present. This is a record attendance.

W. H. Frizell,
County Editor.

Brookhaven,
September 13, 1932.

LEST WE FORGET THEIR GOOD WORKS



H. H. HARALSON, M. D.
Forest
President, Mississippi State Medical Association, 1895-1896.

Hugh Hardin Haralson was born in Wetumpka, Ala., March 10, 1854, his father and mother being natives of Georgia. Dr. Haralson, the youngest in a family of eleven children, was educated at Cooper Institute, Lauderdale County, Miss., entered the drug business in Harperville in 1877 and was graduated from Tulane Medical College in 1883. He began the practice of medicine in Harperville but shortly after went to Forest and later to Biloxi, from which place he moved to Vicksburg in 1898. He served on the State Board of Health for twelve years, being successively appointed by Governors Stone, McLaurin and Longino, and was actively engaged in the epidemics of yellow fever in 1897, 1898 and 1899. He also served as a representative of the State Board during the epidemic of 1905.

Dr. Haralson was elected recording secretary of the Association in 1886 and served for several years, making an excellent record as an executive officer. In 1897 he founded the Mississippi Medical Record which he turned over to the Association the next year, resuming publication of it in 1900 when it was abandoned by the Association.

In 1878 Dr. Haralson married Miss Belle Lack of Harperville and to this union were born seven children. The one son, Guy, enlisted in the Medical Corps for the World War and died of influenza at Camp Shelby.

Dr. Haralson's second marriage was with Miss Janestine Coats and the union has proven a most happy one.

NOTE—If anyone knows of any additions or corrections that should be made to the above sketch, please communicate with Dr. E. F. Howard, Historian, Vicksburg.

WOMEN'S AUXILIARY TO THE MISSISSIPPI STATE MEDICAL ASSOCIATION

MRS. LEON S. LIPPINCOTT,
Vicksburg, Press and Publicity Chairman.

President—Mrs. W. C. Pool, Cary, Miss.

President-elect—Mrs. F. L. Van Alstine, Jackson.

State Convention, Jackson, May 9, 10 and 11, 1933.

A MESSAGE FROM THE STATE PRESIDENT

As this is club season, I want to remind the physicians' wives of the auxiliary and ask them to remember to devote a little time to the organization with as much thought and sincerity as the routine club program. The two can be worked together as well.

I want especially to commend the Harrison-Stone-Hancock Auxiliary for its splendid work. Regardless of the heat, depression and storm, they continue their interesting meetings.

I had a most delightful trip to Meridian, August 18. Although I failed to form an auxiliary that day, I feel that the ladies are getting interested and they are making an effort to arouse enough interest to organize. Trust they are successful and I assure them I am wishing well for them.

Judging from report from North Mississippi Hinds County, Homochitto Valley and Issaquena-Sharkey-Warren Counties Auxiliaries, they have accomplished a good deal during vacation time.

I urge the membership, Hygeia and all committee chairmen to become active and get their committees functioning as much as possible.

The splendid co-operation of all is making it much better for me, and I am so grateful, not only to the ladies but also to the doctors.

Each auxiliary has been furnished a supply of the new secretary's record sheets and cards recommended by the National President, Mrs. Walter Jackson Freeman, Philadelphia, also supplied with a copy of the constitution and by-laws, which was approved at the June Board meeting. These copies were sent that all might be familiar with them, as they will come before the 1933 annual meeting for adoption.

With the continued splendid co-operation of each one, I feel that we can acomplish much durthis season.

Best wishes to all,

Mrs. W. C. Pool.

Cary,
September 10, 1932.

HINDS COUNTY

Dr. and Mrs. Lawrence W. Long, on the morning of Tuesday, August 16, in the Baptist Hospital, welcomed a fine little son, Lawrence Wilburn, 3rd.

Mrs. H. R. Shands left for Texas August 25, to visit her sister, Mrs. Gibbs.

Dr. H. R. Shands left for Colorado August 28.

Mrs. W. L. Hughes.

Jackson,
September 10, 1932.

SHARKEY COUNTY

Dr. and Mrs. Few spent their vacation in the Ozarks of Arkansas and had a wonderful trip.

Mrs. L. E. Martin and daughter, Lady Mary, visited Jackson on the 7th of September. Lady Mary leaves soon for M. S. C. W. where she is a Junior this year.

Dr. and Mrs. Stribling visited Philadelphia friends and relatives.

Mr. Logan McCain, secretary of the Mississippi State Tuberculosis Association, was a visitor in Cary, conferring with Mrs. W. C. Pool and Mrs. Goodman about the Christmas tuberculosis seal sale to be put on in December.

Mrs. H. S. Goodman.

Cary,
September 10, 1932.

WARREN COUNTY

Dr. and Mrs. George Street had as their guest in August, Mrs. Street's niece, Miss Evelyn Towers, of Rome, Georgia.

Dr. and Mrs. J. S. Ewing and son, Jack, have returned from a visit to the coast.

Miss Emmy Lou Lippincott, daughter of Dr. L. S. Lippincott, has departed for Columbus, where she will be a student at M. S. C. W.

Dr. and Mrs. Laurence J. Clark had Mr. and Mrs. Hugh McLaurin of Chicago as their house guest last month. While here the stork visited Mrs. McLaurin, presenting her with a small daughter. Mrs. McLaurin is the sister of Mrs. Clark.

Dr. and Mrs. W. H. Parsons and daughters are entertaining Miss Ruby Parsons, sister of Dr. Parsons.

Dr. Guy Sanderson's motor boat seems to be very popular these days, as he has acted as host to several informal parties aboard.

Dr. and Mrs. Hugh H. Johnston and charming little daughter, Martha Ann, from Rochester, Minn., and Mrs. Johnston's sister, Miss Polly Pond, who has been spending the summer with them, have arrived in Vicksburg to visit their parents, Dr. and Mrs. Sidney Johnston, and Mr. and Mrs. J. D. Pond.

Dr. and Mrs. Charles F. Clayton and family have departed for their home in Knoxville, Tenn., much to the regret of their new friends made here. Dr. Clayton has been here two years, being connected with the Vicksburg Infirmary and the State Charity Hospital.

Dr. and Mrs. Edley H. Jones and son are spending a few days this month on the Gulf Coast. Dr. Jones expects to do some fishing while away.

Mrs. A. J. Podesta, wife of Dr. Podesta, superintendent of the State Charity Hospital, has returned from New Orleans, where she was the guest of her son, Volney Liddell, who is a medical student at Tulane University.

Benson Martin, Jr., son of Dr. and Mrs. B. B. Martin, will resume his studies of medicine at Tulane University this fall.

Dr. A. Street won first place in a local golf tournament staged at the National Park Golf Club on Labor Day.

Mrs. H. H. Haralson.

Vicksburg,
September 12, 1932.

AUXILIARY ENTERTAINS AT ANNUAL NURSES PARTY

The Women's Auxiliary to the Issaquena-Sharkey-Warren Counties Medical Society gave its annual party for the student nurses and student clinical laboratory technicians at the Y. M. C. A. on September 14.

Lunch was served at beautifully decorated tables, and at the beginning of the meal, the fun began. Song followed song, and after supper each of the delegations, those from the Mississippi State Charity Hospital, Vicksburg Infirmary, Vicksburg Hospital and the Vicksburg Sanitarium made splendid original contributions to the program.

The doctors' wives also had a part to play, and every one present enjoyed each other's efforts. After the various "stunts" had been put on, about fifty guests took advantage of the lovely swimming pool, while the remainder of the party enjoyed being spectators in the balcony.

Ninety-seven people were present, and all reported a marvelous time. The following ladies were responsible for the evening's entertainment. Mrs. E. F. Howard, general chairman, with Mrs. B. B. Martin, Mrs. Vincent Bonelli, Mrs. George Street, Mrs. Willard Parsons and Mrs. Laurence J. Clark assisting.

Miss Helen Boswell, daughter of Dr. Henry Boswell, Sanatorium, will attend Millsaps College, Jackson, this year.

Miss Boswell won the highest honor which can come to a student at Whitworth College, last year, when she was awarded the Founder's Medal at the close of last session. Leading to this recognition, she had served as president of the student body, as a regular contributor to the "Whistle," college publication, as president of Phi Theta Kappa, honorary sorority, and vice-president of the State Student Government Association.

On September 8, Miss Elizabeth, daughter of Dr. and Mrs. W. H. Frizell of Brookhaven, became the bride of Jack Sarphie, son of Mr. and Mrs. E. Sarphie, of McComb. The ceremony was performed in the Frizell home, Dr. C. W. Crisler, Methodist pastor, officiating.

After a brief honeymoon in New Orleans, the couple will make their home in Brookhaven where the groom is engaged in the theatre business.

An auxiliary to the East Mississippi Medical Society will be organized. A temporary meeting was held in connection with the bi-monthly meeting of the doctors at the home of Dr. B. L. Robinson, during the month of August, with Mrs. W. C. Pool, State Auxiliary President, as guest of honor. Mrs. C. T. Burt was named temporary chairman and Mrs. T. L. Bennett temporary secretary.

Mrs. Burt later called a meeting of all women of the four counties who are eligible to membership in the auxiliary. The district includes Lauderdale, Neshoba, Winston and Newton Counties.

We hope to get a detailed account of this new auxiliary, and wish them well in their newly organized auxiliary.

HONOR ROLL

The following have contributed to this number of our Journal, for which your editors thank you:

COUNTY EDITORS—L. Wallin, W. N. Jenkins, William F. H. and W. H. Scudder, B. S. McIlwain, J. B. Thigpen, G. C. Terell, C. T. Burt, W. B. Dickins, W. H. Frizell, G. S. Bryan, J. S. Hickman, E. M. Murphey, H. L. Scales, R. P. Donaldson, R. B. Cunningham, E. L. Walker, C. M. Murry, F. M. Acree, M. L. Montgomery, C. M. Coker—21.

COUNTY MEDICAL SOCIETIES—East Mississippi, Harrison-Stone-Hancock Counties, Issaquena-Sharkey-Warren Counties, Jackson County, Northeast Mississippi Thirteen Counties, Pike County, South Mississippi, Tri-County, Eighth Councilor District—9.

HOSPITALS—Vicksburg Hospital, Chamberlain-Rice Hospital, Vicksburg Sanitarium, King's Daughters' Hospital, Greenville; Mississippi Baptist Hospital, Jackson County Hospital—6.

WOMEN'S AUXILIARY—Mrs. W. C. Pool, Mrs. W. L. Hughes, Mrs. H. S. Goodman, Mrs. H. H. Haralson, Mrs. Leon S. Lippincott—5.

OTHER CONTRIBUTORS—W. H. Parsons, F. J. Underwood, J. B. Hirsch, E. F. Howard, A. Street, R. A. Street, Jr., G. C. Jarratt, W. G. Weston, G. R. Lewis—9.

GRAND TOTAL—50.

SPECIAL HONORARY CONGRATULATIONS:

To Dr. E. F. Howard, Vicksburg—has contributed to every number for the past 17 months.

To Dr. G. S. Bryan, editor for Monroe County—has missed one number in the past 17 months; none in the past 12 months.

To Dr. R. P. Donaldson, editor for Pontotoc County—has missed one number in the past 16 months; none in the past 10 months.

To Dr. W. B. Dickins, editor for Leflore County—has not missed since his appointment—10 months.

To Dr. B. S. McIlwain, editor for Jackson County—has not missed in the past 10 months.

To Dr. M. L. Montgomery, editor for Winston County—has missed three times in the past 17 months; none in the past eight months.

IT IS SUCH SERVICE THAT MAKES OUR MISSISSIPPI SECTION OF THE JOURNAL.

MEDICINE.—There are more physicians relative to population in the United States than in any other country in the world—about 156,440 in 1931, representing 1 doctor to every 800 inhabitants. The number of doctors, however, is not increasing as rapidly as population, and the Commission on Medical Education estimates that the number of doctors in the United States will probably decrease until about 1945, at which time an upward trend will begin. While the present supply of doctors may be adequate for the country as a whole, distribution is uneven, varying from 1 doctor to every 1,400 persons in South Carolina and Montana to 1 for every 500 persons in California. Three-fourths of all physicians are general practitioners, and one-fourth are specialists.

It is recently reported that specialism has probably been developed beyond the actual needs of individuals and the community. In 1928 there were 19,277 specialists who limited their practice, and as many more who were interested in but not limited to a medical specialty. Of the specialists, 29 per cent limited their practice to head specialties, which include opthalmology, otology, laryngology, and rhinology; 18 per cent general surgery; 15 per cent internal medicine; 6 per cent neurology and psychiatry; 5 per cent urology; 5 per cent obstetrics and gynecology; 5 per cent pediatrics; 4 per cent Roentgenology; 3 per cent public health; 2 per cent dermatology; 2 per cent orthopedic surgery; 2 per cent pathology and bacteriology; 2 per cent tuberculosis; 1 per cent proctology; and 1 per cent anesthesia. One-fourth of all doctors are interested in specialties, and half of these limit their practice as indicated above.—Walter J. Greenleaf, U. S. Department of Interior, Office of Education, 1931.

BOOK REVIEWS

The Medical Service of the Homestake Mining Company: By Louis S. Reed, Ph. D. Chicago, University of Chicago Press. 1932. pp. 54. Price, $0.60.

This report, Number 18 of the publications of the Committee on the Costs of Medical Care, represents a study of medical service in a mining town in South Dakota. The general tendency of this report is to accentuate a type of service usually spoken of as contract service, to point out some of its advantages as well as its disadvantages.

J. H. MUSSER, M. D.

The Youngest of the Family: By Joseph Garland, M. D. Cambridge, Mass., Harvard University Press. 1932. pp. 196. Cloth. Price, $2.00.

The title of this book at once suggests that it might be a book of fiction but it really is not. It is devoted to the care and training of the child. The book is very well written and planned, and to the writer's opinion it is the most up-to-date on this subject. Several chapters are especially good, the one on Growth and Development is most modern in every detail. The section dealing with Mental Growth is very complete and the summaries of the mental ages are most useful. Another chapter well written and full of the most modern views is the one on General Health Principles.

This book is an excellent one for the physician to recommend to young mothers and also an excellent volume for the physician to have at hand for ready information.

JULIAN GRAUBARTH, M. D.

Medicine Among the American Indians: By Eric Stone, M. D. New York, Paul B. Hoeber, Inc. 1932. pp. 139. Price, $1.50.

This is the newest and most interesting volume in a very instructive and entertaining series of pocket size books.

I. L. ROBBINS, M. D.

Clinical Interpretation of Laboratory Reports: By Albert S. Welch, A. B., M. D. Philadelphia, P. Blakiston's Son & Co., Inc. 1932. pp. 366. Price, $4.00.

A timely book and one that the general practitioner must welcome. A careful study will keep him abreast of the times and make possible a more intelligent interpretation of the laboratory data submitted to him.

I. L. ROBBINS, M. D.

Classic Descriptions of Diseases: By Ralph H. Major. Baltimore, Charles C. Thomas. 1932. pp. 630. Prise, $5.50.

This book, one of the most delightful I have had the opportunity of looking over in a long time, contains abstracts of many, one might almost say most, of the important classic medical contributions which are presented as translations from the original when not written in English. The work, representing a really definite contribution to medical history, contains the material which Dr. Major has been many years collecting. The medical world is to be congratulated that he has had this particular and interesting hobby and that he has taken the time and the trouble to get together all of the material contained between the two covers of the book.

The first chapter of the book contains important selections from writings on the infectious diseases, the second chapter on diseases of metabolism, then follows chapters with original descriptions of lead poisoning, diseases of the circulatory system, the blood, respiratory diseases, deficiency diseases, diseases of allergy and the digestive tract. Picking at random some of the extracted original description of diseases one notes the historic presentation by Fracastorius on syphilis, or the French disease; that of Hutchinson on the teeth as a means of diagnosing heredito-syphilitic struma; Hippocrates' description of epidemics of tuberculosis, and Laënnec's contribution on the physical signs of tubercle. Some of the accounts are not by physicians. An extract is taken from the Decameron, while Daniel Defoe's Journal of the Plague Year is quoted. There is a section on diphtheria, in which Bretonneau's treatise on diphtheria, the first definite separation of the disease as a nosologic entity, is presented in part. Gerhard's most casual but historic differentiation of typhus fever and typhoid fever is given place in the book. It would be impossible to mention all of the great contributors to medical literature that have been selected to republish, but lest it be thought that all of the selections are entirely from the past it should be mentioned that Opie's contribution on hyaline degeneration of the pancreas is extracted and Banting's announcement of his epoch-making, Nobel Prize discovery of insulin also is selected. Among living medical men, Pierre Marie, whose report on two cases of acromegaly is of historic significance is likewise honored, as are George Dock and James B. Herrick. To Herrick is given the honor of two extracts, the one from his description of coronary occlusion which first aroused interest in this condition throughout the world, and the second on sickle cell anemia. Of course,

there are half a dozen or more examples from Laënnec's writings.

In addition to the original reports, Dr. Major has supplemented most of the extracts by brief and interesting bibliographic sketches or a few comments upon the author whose selections follow. These short paragraphs, added to the original descriptions, make the book phenomenally interesting and of very real value. The abundant and appropriate illustrations add still more to the work. It should be in the hands of any one with the slightest interest in medical history.

J. H. MUSSER, M. D.

Medics, or the Glory of Man: By James A. DeMoss. Author, 1931. pp. 148.

A small volume of poems and sonnets by a physician conscious of the true intent of his noble profession. The poems treat of high ideals, lofty ambitions and noble loves of man for man.

I. L. ROBBINS, M. D.

Fungous Diseases: A Clinico-Mycological Text: By Harry P. Jacobson, M. D. Springfield, Ill., Charles C. Thomas. 1932. pp. 317.

This treatise on this very important branch of medicine, which has filled so many pages of medical literature, would keep the alert physician of the past generation spell-bound until the last page had been read, were he to return to this life and find this book on his desk.

So many diseases have been isolated from the group of diseases of whom the causative agent was unknown in this past decade and so much has been learned about the diseases which were named but poorly differentiated, that a modern up-to-date concise monograph of this sort is a real needed addition to our book shelf. Both for reference and for teaching.

The text is well balanced in description, diagnosis, prognosis and treatment of fungous diseases, which were spoken of as tropical diseases a few years ago, but which, are so wide spread geographically, that they are the topic of every gymnasium, school or golf club gathering.

We owe much to Dr. Jacobson for this useful contribution.

M. T. VAN STUDDIFORD, M. D.

Essentials of Pediatric Nursing: By Ruth Alice Perkins, R. N., B. S. 2d ed. rev. and enl. Philadelphia, F. A. Davis Co. 1932. pp. 467.

Essentials of Pediatric Nursing is excellent, both as a text-book for the under-graduate and as a reference for the graduate. It gives the essentials and details of pediatric nursing. Attention is paid to the ordinary routine care of the baby, that bothers the mother and that so few nurses can answer. The chapters on nutrition, the care of the premature, and on infectious diseases are unusually thorough and stress the fundamentals that are essential to the proper understanding of the subject. Miss Perkins never forgets that pediatric nursing is entirely different from adult nursing and that she must understand and love children to succeed in her profession.

SUZANNE SCHAEFER, M. D.

Handbook for Senior Nurses and Midwives: By J. K. Watson, M. D. (Edin.), Capt. R. A. M. C. 2d ed. London, Oxford Univ. Press. 1931. pp. 676.

A very interesting and instructive volume for senior nurses and midwives. Dr. Watson covers a great deal of medical information in a surprisingly compact book. His chapter on pelvic measurements and difficulties of obstetrics are especially good.

JOHN F. DICKS, M. D.

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D. Appleton & Company, New York: The Curative Value of Light, by Edgar Mayer, M. D. Treatment of Syphilis, by J. F. Scambery, A. B., M. D., and Carroll S. Wright, B. S., M. D.

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Charles C. Thomas, Springfield: The Cardiac Output of Man in Health and Disease, by Arthur Grollman, Ph. D., M. D. Endocrine Medicine, by William Engelbach, M. D., Volumes I, II, and III.

Lea & Febiger, Philadelphia: A text-book of Pathology, by William Boyd, M. D.

Oxford University Press, New York: Handbook of the Vaccine Treatment of Chronic Rheumatic Diseases, by H. Warren Crowe, Second Edition.